United States Department of Interior
Bureau of Land Management

Lewistown Field Office April 2004

FINAL
ENVIRONMENTAL ASSESSMENT AND PLAN FOR THE ARROW CREEK/UPPER RIVER/ WHISKEY RIDGE LANDSCAPE
MT060-02-12

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific and cultural values.

BLM/MT/PL-04/008

GUIDE TO UNDERSTANDING THIS ENVIRONMENTAL ASSESSMENT

To better understand this document, carefully study this page. We have written this environmental assessment to:

- Provide the Bureau of Land Management's Lewistown Field Manager with sufficient information to make an informed, reasoned decision in accordance with the National Environmental Policy Act (NEPA).
- Describe issues that were identified during public comment periods.
- Develop goals and objectives to improve or maintain conditions of natural resources and improve overall management.
- Disclose the alternatives and the environmental and economic consequences of each alternative to members of the public and affected parties so that they may express their opinions to the Field Manager.
- Reissue new ten year grazing permits/leases and implement standards and guidelines for rangeland health.

Chapter 1: The introduction provides a very brief description of the Landscape including the location of the planning area and the purpose and need for the assessment. This chapter also explains the direction and conformance with existing land use plans and lists the issues and objectives specific to the Landscape.

Chapter 2: This chapter describes a range of alternatives (actions) that have been considered to address issues, goals and objectives. Specific information on individual grazing allotments can be found in this chapter.

Chapter 3: This chapter briefly describes the past and current conditions of the relevant resources in the landscape that would be meaningfully affected. Information on soils, vegetation, hydrology, economics etc. can be found in this chapter.

Chapter 4: This chapter presents the impacts that would occur as a result of implementing each alternative. This chapter discusses the potential environmental, social, and economic consequences of taking and of not taking action.

Chapter 5: This chapter describes the BLM's coordination and public involvement efforts with the public, other government agencies, and affected stakeholders.

Chapter 6: This chapter displays the comments received from the public and other agencies on the draft environmental assessment/plan. A response is provided for each comment.

Appendix : Provides additional technical data, maps, tables and specific information on resources in the planning area. A summary of the appendix can be found in the table of contents.

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Chapter 1.0 Introduction and Background

Section Content

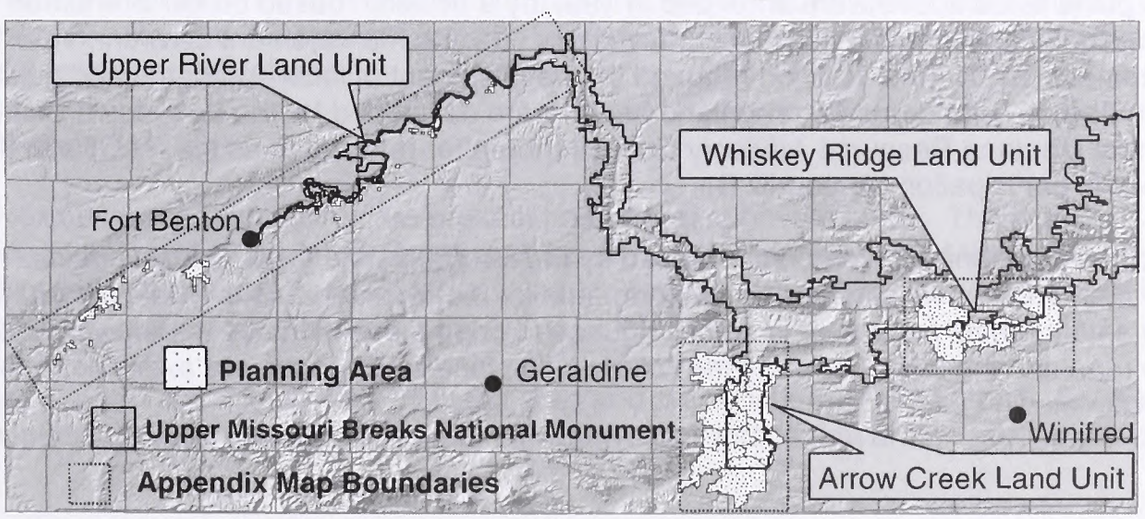
1.1 Location

The Arrow Creek/Upper River/Whiskey Ridge Landscape (hereafter referred to as the planning area) encompasses three portions of public land:

- Arrow Creek Land Unit: Large blocks of public land adjacent to or near the Arrow Creek drainage from Arrow Creek Bench downstream to Deadman Coulee.
- Upper River Land Unit: Scattered tracts of public land on the south side of the Missouri River from Morony Dam downstream to Coal Banks landing.
- Whiskey Ridge Land Unit: Scattered tracts of public land in the Whiskey Ridge area and several isolated parcels of public land near the Judith River.

The planning area is located in Chouteau and Fergus Counties, Montana. Major tributaries in the planning area include Arrow Creek, Dog Creek, and the Judith River. The Missouri River forms the northern boundary of the Landscape. The planning area contains approximately 31,500 acres of land administered by the Bureau of Land Management (BLM) (public land). Appendix M-1, M-2, & M-3 displays detailed maps of the area.

Location Map of the Planning Area



1.2 Background and Need for Proposed Action

The Judith-Valley-Phillips Resource Management Plan (RMP) (1994), the West Hi-Line Resource Management Plan (1988), the Wild and Scenic River Plan Update (1995) and the Upper Missouri River Breaks National Monument Interim Guidance (hereafter referred to as the Interim Monument Guidance) specifies land use plan decisions and objectives to be implemented in the planning area. The Judith Valley-Phillips RMP specifies that implementation of riparian/wetland decisions will consider management of streams, water sources and uplands. Management direction in the West Hi-Line Plan is limited to a very small portion of the planning area in the north portion of the Whiskey Ridge Unit. The Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas (July 2003) updates direction for fire and fuels management to emphasize sustaining the ecological health and function of fire-adapted grasslands, shrublands, and forestlands; and reducing the risk and cost of severe wildland fires.

Public lands administered by the Lewistown Field Office (LFO) were prioritized for implementation of land use plan decisions based on multiple use criteria. The Arrow Creek/Upper River/Whiskey Ridge Landscape was given a high priority for management and land use plan decision implementation.

A need exists for an environmental assessment when renewing 10-year grazing permits. This environmental assessment will review the allotments in the landscape for compliance with the standards and guidelines for rangeland health (Appendices A & B).

1.3 Direction from and Conformance with Land Use Plans

The Judith Valley-Phillips RMP, West-Hi Line RMP, the Upper Missouri Wild and Scenic River Plan Update (WSRPU, 1995) and the State Director's Interim Monument Guidance set forth the land use decisions and conditions guiding management of public land and minerals within this planning area. All uses and activities within the area must conform to the decisions, terms and conditions described in these plans. Appendix J describes the guidance contained in these plans that is pertinent to the planning area. The West-Hi Line RMP and the Wild and Scenic River Plan Update is only applicable to the Wild and Scenic portions of the landscape (northern portion of the Whiskey Ridge landscape unit).

The plans listed above were amended in 1997 by a decision based on the Standards for Rangeland Health and Guidelines for Livestock Grazing Management Environmental Impact Statement (EIS). This decision required the development of local standards and guidelines for each district. Standards for rangeland health were developed for the Lewistown District by the Central Montana Resource Advisory Council (hereafter referred to as the RAC) with the benefit of public participation (Appendix B).

All plans mentioned have been amended by the Fire/Fuels Management Plan and Environmental Assessment/Plan Amendments for the Montana and the Dakotas (July 2003). The amendments replace or include language to bring these plans up to date with the National Fire Plan and the 2001 Federal Fire Policy. The plans listed above are available to the public at the Lewistown Field Office.

1.4 Issues and Objectives Specific to the Planning Area

1.4.1 Riparian Health

Issue: The riparian area standard is not being met for some of the riparian areas on public lands. Livestock are a significant factor in some cases.

Short-term objective: Maintain the 20.7 miles of riparian areas that are in proper functioning condition (PFC) or are making significant progress toward PFC. Make significant progress toward achieving PFC on the 3.2 miles of riparian areas in functioning-at-risk (FAR) condition where livestock are a significant factor within the next grazing year.

Long-term objective: Maintain the 20.7 miles of riparian areas that are currently meeting the standard and improve all riparian areas to PFC within 10 years where livestock are a significant factor.

1.4.2 Upland Health

Issue: The upland health standard is not being met for some of the upland areas on public lands. Livestock are a significant factor in some cases and other areas are affected by encroaching pines. Forest health has been compromised in portions of the Whiskey Ridge landscape unit due to drought and increased stand densities from lack of fire.

Short-term objective: Maintain the 36 allotments that are meeting the upland standard and take actions that will ensure significant progress is made toward meeting the upland standard on the three allotments that are not meeting the upland standard because of livestock grazing.

Long-term objective: Maintain or improve upland areas so that all allotments are meeting the upland health standard or are making significant progress within 10 years, where livestock management is a significant factor. In the Whiskey Ridge unit, use prescribed fire to reduce pine encroachment into open parks; enhance shrub growth for wildlife benefit; and in forested areas, reduce stand densities to improve grass, forb, and shrub coverage, and improve forest health.

Indicators include those listed in standards for rangeland health (section 3.5 and appendix B) with particular emphasis on plant species composition, ground cover, plant vigor, plant community diversity and soil surface stability. All indicators would be applied based on the site potential of each ecological site.

1.4.3 Weeds

Issue: Noxious weed populations are present on public and private lands. The highest populations are found along Arrow Creek and the banks and islands of the Missouri River. New infestations include isolated populations of tamarisk (salt cedar) in Dog Creek and Arrow Creek and dalmation toadflax near Arrow Creek.

Objective: Control the known noxious weed sites and any new infestations found. Eradicate any new populations of category 3 weeds (highly invasive weeds that are not well established).

1.5 Issues Considered but Not Addressed

The following issues are not addressed in this plan. All will be addressed in the upcoming Upper Missouri River Breaks National Monument Resource Management plan (Monument RMP):

- recreation
- access
- OHV and travel plan
- lands (exchanges and purchases)
- mining
- oil and gas field development plan
- cultural (archeological and historical)

Impacts to recreation and cultural resources from changes in grazing management and range improvements projects are considered in this assessment. However, this assessment does not address overall management of recreation, cultural resources or any of the other resources or activities listed above.

1.6 Issue Objectives Summary

The following table lists issues and describes how the various alternatives would address each issue.

ISSUE	UPLAND VEGETATION	RIPARIAN VEGETATION	WEEDS
ALT #1 Continue Current mgmt.	Approximately 10% of the planning area is not meeting the upland health standard.	Not meeting objectives on 3.2 stream miles in three allotments due to livestock grazing.	Current weed control efforts are not keeping pace with weed expansion. Objective is not being met.
ALT #2 Proposed action	All allotments would meet the rangeland health standard or make significant progress in 10 years.	All allotments would meet the riparian objectives.	The weed objective would be met.
ALT #3 No Grazing	All allotments would make significant progress towards meeting the standard in the short term. After 7-10 years a downward trend would begin to occur on some allotments from lack of grazing.	All allotments would meet the riparian objectives without the need for exclosure fences.	The weed objective would not be met.

Chapter 2.0 Proposed Action and Alternatives

Section Content

In compliance with the National Environmental Policy Act (NEPA), and national BLM policy, an environmental assessment (EA) must be prepared for issuing a grazing permit or lease on public land. The assessment must consider a reasonable range of alternatives.

Summary of alternatives evaluated in this EA:

- No Action (alternative 1): Continuation of current management with no changes to grazing practices. Projects to reduce fuels and improve forest health would not occur under this alternative. There would be no new range improvements or rangeland restoration projects.

- Proposed Action (alternative 2): Changes to grazing practices on allotments not meeting the standards for rangeland health. Construction of new range improvements and rangeland restoration projects. Projects to reduce fuels and improve forest health would occur in the Whiskey Ridge area.

- No grazing (Alternative 3): Grazing permits would be allowed to expire and domestic grazing would stop as permits/leases expire. Projects to reduce fuels and improve forest health would not occur under this alternative. There would be no new range improvements or rangeland restoration projects.

A detailed explanation of the alternatives is shown in section 2.1, 2.2 & 2.3.

The analysis area was separated into three land units based on similarities in topography, soils, climate, vegetation, and land ownership patterns. These units are: 1) Arrow Creek land unit, 2) Upper River land unit and 3) Whiskey Ridge land unit (see maps in appendix M 1.2, M 2.2, & M 3.2).

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2.1 Alternative 1 - Continuation of Current Management

Sometimes called "no action", this alternative renews the grazing permit with the same terms and conditions as the current permit. If the allotment is currently not meeting standards and guidelines, this alternative provides no new measures to take corrective actions. Under this alternative, noxious weed control would continue at existing levels, but no other types of vegetation treatments would occur. Projects to improve upland or riparian values would not be completed.

2.1.1 Vegetation Management (Riparian Health, Upland Health)

Livestock grazing would remain consistent with the current permit/lease. Under this alternative, no new projects would be constructed to protect/enhance riparian or upland values. Issue objectives would not be met in this alternative. Prescribed fire projects would not be implemented.

2.1.2 Weeds

BLM would continue current weed control efforts within the landscape using only herbicides approved by the Environmental Protection Agency (EPA) and the BLM. The Upper Missouri River Breaks National Monument: Guidelines for Integrated Weed Management (USDI, BLM, 2001) outlines actions BLM would pursue for weed control in the planning area. A limited use of herbicides along the river would continue, primarily in developed recreation area. Extreme caution would be taken to avoid damage to desirable vegetation, especially woody species. BLM would continue to develop cooperative agreements with livestock grazing permittees for noxious weed control on upland weed infestations. Under these agreements, the BLM agrees to provide the proper type and amount of herbicide and the permittee agrees to apply the herbicide. Application may be made by the properly licensed permittee or may be contracted to a licensed applicator at the permittee's cost. Biological control efforts would continue through release and dissemination of newly available and established biocontrol agents. The issue objectives for weeds would be met in this alternative.

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2.2 Alternative 2 - Proposed Action

This alternative proposes changes to better manage vegetation, water, soils and wildlife habitat. Management changes for those allotments not meeting standards and guidelines are included in the proposed action listed under each grazing allotment in section 2.2. Several vegetation treatments would be initiated including prescribed burns and mechanical removal of trees on forest margins in the Whiskey Ridge land unit. Noxious weed control efforts would be increased. Several range improvement projects are proposed including two barbwire fences, two pit reservoirs, and one project that would restore degraded rangeland. Specific range improvement projects are described in section 2.2.2. Existing grazing permits and leases would be cancelled and new grazing permits/leases would be offered with Standards and

Guides for Rangeland health incorporated into the terms and conditions of the permit/lease (appendix A & B). To reduce the potential spread of disease from domestic sheep to bighorn sheep, any future proposals to graze domestic sheep on public lands on Whiskey Ridge, Blind Canyon, Stulc, and Dog Creek Allotments would be denied.

2.2.1 Vegetation Management (Riparian and Upland Health)

Significant progress toward meeting standards for rangeland health would be accomplished and guidelines followed through a variety of management techniques as shown in section 2.2. Management on allotments that are not meeting standards would be changed to improve resource conditions and meet standards.

Changes proposed include increasing the length of rest periods between graze periods, changing the season of use, grazing intensity, duration of grazing and/or improving livestock distribution. Improved livestock distribution would occur through construction of water developments and fences, and through selective salt placement.

The guidelines for grazing management for this landscape are based on the Guidelines for Grazing Management that were initially developed for Central Montana by the RAC with input from the public. Guidelines are listed in Appendix A.

A 4 inch stubble height average or 50% utilization limit of upland grass species would be implemented as part of this alternative. The four-inch stubble height or 50% utilization limit is based on studies that demonstrate greater vigor of grasses grazed at moderate levels. (Van Pollen and Lacey 1979, Troxel and White 1989, Vallentine 1990). The stubble height requirement would not be enforced during drought periods if grasses are severely stunted by drought. In times of severe drought, utilization measurements would be used instead of stubble height measurements. Stubble height standards would not be applied to short growing grasses such as blue grama. Key upland grasses would include western wheat grass, green needle grass and blue bunch wheatgrass.

Utilization of key riparian grasses would be limited to an average 4 inch stubble height at the end of the grazing season or growing season, whichever occurs last. Key riparian grasses include Spartina pectinata (prairie cordgrass), Agropyron smithii (western wheatgrass), Carex spp. (sedges), and Scirpus pungens (three-square bulrush). Utilization of the key palatable woody species Cornus stolonifera (red-osier dogwood), Salix spp. (willows), Populus spp. (cottonwoods and aspen), Acer negundo (box elder), Frazinus pennsylvanica (green ash), Prunus virginiana (chokecherry) and Ribes spp. (currants) should be limited to light to moderate browsing as described in "Browse Evaluation By Analysis of Growth Form, Volume I, Methods For Evaluating Condition and Trend" (Keigley and Frisina, 1998). Intense browsing shall be considered not meeting the riparian standard.

Range improvement projects would be implemented to improve resource conditions and better distribute cattle. Cooperative agreements and cost share proposals would be developed with permittees to construct or rebuild range improvements and treat noxious weeds. Ten-year permits/leases would be offered for all allotments and standards and guidelines would be incorporated into the permit. Degraded rangeland on one allotment would be restored through the seeding of native plants followed by a rest from grazing for two growing seasons.

Prescribed fire is proposed in portions of the Whiskey Ridge land unit to improve wildlife habitat and rangeland/forest health. Dense pine/Douglas-fir forests would be treated. In some cases,

pine encroachment onto open parks and ridges would also be treated. A reduction in forest densities would improve herbaceous plant production and shrub growth and improve infiltration of water into the soil. Prescribed burning would be implemented under specific conditions that create low to moderate fire intensity that would burn the understory with occasional crown runs into the tree canopy. Areas within the treated site would remain unburned so that a mosaic burn pattern is achieved.

Mechanical treatments are proposed in some areas to reduce pine encroachment on forest margins in the Whiskey Ridge land unit. Treatments would be accomplished by hand thinning, piling, and burning piles. Potential prescribed fire or mechanical treatment areas are identified on map M-3.5. The areas shown on the map represent general areas where treatments may be done; specific units would be identified within those areas. Agreements would be formalized with landowners and/or other agencies if prescribed burn units span ownership boundaries and other landowners/agencies are agreeable to the use of prescribed fire.

Prescribed burning and pile burning must conform to the provisions of state regulations and implementation plans as specified in 9210-Fire Planning section of the BLM manual. The parameters of a burn plan specify: weather, fuel moisture, resource objectives (example: improved shrub growth for wildlife), treatment objectives (example: % reduction in forest canopy), personnel, smoke management and permits, hazards, safety precautions, contingency plans (escaped fire), and local contacts that must be made before implementation. Burn plans would be prepared and reviewed by qualified personnel and signed by the BLM Field Manager. Due to the specific parameters defined in a prescribed fire plan, implementation may not be possible in some years.

2.2.2 Adaptive Management

Under this alternative adaptive management would be used to alter the course of management if the proposed action is failing to achieve goals and objectives or if changing circumstances or direction dictate the need to make adjustments to management.

Adaptive management is a management approach that recognizes in advance that adjustments to plans may be necessary to achieve resource objectives. Failure to make progress toward resource objectives, drought, or outbreaks of insects are all examples of the types of circumstances that may necessitate adjustments to plans.

The adaptive management approach recognizes the need for flexibility to meet objectives and allows corrective actions and adjustments to occur based on monitoring results. This plan treats corrective actions as small, short-term changes that would be taken to address problems with over-utilization of rangelands by livestock. Management adjustments are changes that would alter long-term management of resources. These adjustments would apply to vegetation treatments and grazing.

Under adaptive management, the following adjustments may be implemented to better manage resources.

Livestock Grazing:

- Change in the season of use, duration of use, or intensity of livestock grazing.
- Development of off-site water.
- Alteration of the grazing rotation sequence.

- Creation of additional pastures or changes in the size of existing pastures.
- Construction of exclosures to protect sensitive areas.
- Rest from grazing or temporary reduction in AUMs may be required during or after drought periods or after other forms of major disturbance such as hail, insect outbreaks, or wildfire.

Vegetation treatments/restoration:

- A rest period of two growing seasons would normally be required after disturbance, however this period may be lengthened or shortened based on monitoring

- Infestations of noxious weeds on any treated site would be addressed immediately. Class C weeds would be prioritized for treatment.

- Failed range seedings would be replanted at the earliest opportunity.

- Prescribed burns may require several years to implement depending on funding, staffing and availability of proper burn windows.

Potential management adjustments for allotments with complex management and sensitive resource issues have been analyzed by an interdisciplinary team so that changes can be made immediately if progress towards meeting standards is not occurring or allotments meeting standards begin to show a measurable downward trend. These actions are listed under individual allotment proposals in this chapter. Potential impacts are displayed in chapter 4 under the individual allotments section. Prior to implementation, management adjustments would be reviewed by an interdisciplinary team in consultation with the affected permittee/leasee.

The following is a summary of short-term corrective actions to address over-utilization of riparian and range vegetation:

- If stubble height standards are exceeded, more conservative standards may be implemented the following year (the four inch standard stubble height limit would be changed to a six inch limit).

- If stubble height standards are exceeded for two consecutive years, partial rest from grazing may be required (limited numbers or shortened grazing season) along with a six inch stubble height limit (Appendix F).

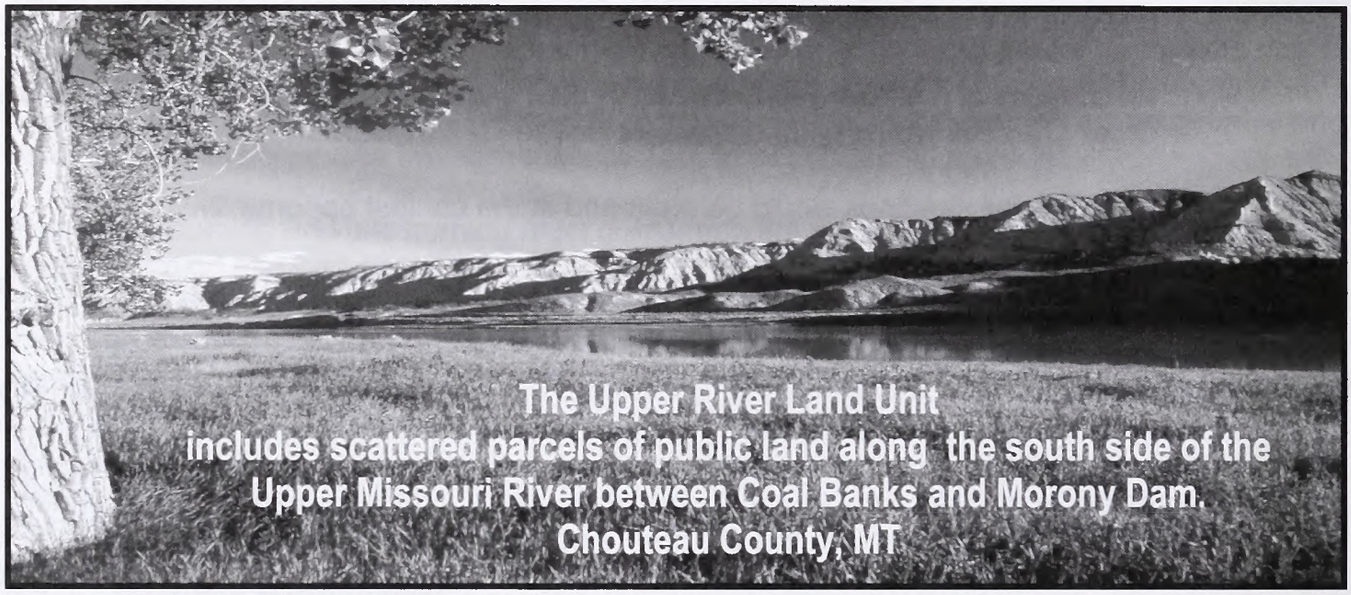
- When range or riparian stubble height standards are exceeded for three consecutive years, a health assessment would be completed. If standards for rangeland health are not met or fail to make significant progress because of livestock management practices, additional actions may be taken pursuant to BLM's grazing regulations, including reductions in permitted use.

Appendix F lists detailed corrective actions for individual circumstances including utilization standards for browse, grass and grasslike plants. The table in Appendix K describes the current status of the allotments and permits/leases in the landscape. Maps M-1.1, M-2.1, M-3.1 displays the location of the allotments.

Under the proposed action, the following actions would be implemented to meet standards or make significant progress towards meeting rangeland health standards on individual allotments. Rangeland health determinations are displayed in appendix M.

Allotments are grouped according to the land unit and then listed alphabetically. The permitted use in Animal Unit Months (AUMs) applies only to public land administered by the BLM.

PROPOSED ACTION FOR THE UPPER RIVER LAND UNIT



Maps of this land unit are shown in appendix M-1.1—M-1.3

ABN Allotment – 09640, Lease 2506701 (ABN Ranch)

Upland Objectives: - maintain vegetation in late seral (ecological site index 50 or better)
- maintain upland range health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: Yes

Proposed Action: The permitted use would continue with 8 head of cattle and 66 AUMs permitted between April 1 and January 1. Public lands would be managed with private lands under a rest-rotation grazing system.

B Lazy M Allotment – 09825, Lease 2506879 (Steven)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A (no significant riparian present)

Proposed Action: The permitted use would continue with 3 head of cattle and 41 AUMs permitted year round.

Baker Bar Allotment – 02521, Lease 2506784 (Ebeling)

Upland Objectives: - improve vegetation to late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: No. 0.7 mile of Shonkin Creek is not meeting standard

Proposed Action: This alternative would reduce the season of use from year round (including hot season) to September 15-May 1 on the east 40 acre parcel and permit year round use on the west 40 acre parcel. Permitted use for both parcels would be 2 head of cattle and 19 AUMs.

Bird Coulee Allotment – 09755, Lease 2506809 (Teton Land Corp.)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: No--1.8 miles of Bird Coulee not meeting standard

Proposed Action: This alternative would reduce hot season livestock use. The season of use from May 15-October 15 would be changed to June 1-Novermber 1. The permitted AUMs would remain at 119 AUMs. Bird Coulee pasture would be grazed from June 1 – November 1 with a 1-month rest period during the hot season. The West Coulee pasture would be grazed for a 1-month period during the hot season (July 1 – September 15). The leasee is currently installing a pipeline and a stock water tank on private land to provide water to the Bird Coulee pasture in order to improve livestock distribution on private and public land. The stock water tank would be located in T23N, R8E, NE1/4 of Sec 19. The total animal numbers for private and public land would be limited to 45 head.

Current Use

Pasture	Numbers	Season of Use	AUMs
West Pasture	24	June 1 to July 1	24
Bird Coulee	24	July 2 to Oct. 15	95

Proposed Action

Year 1

Pasture	Numbers	Season of Use	AUMs
Bird Coulee	24	June 1 to July 31 Sept 2 to Nov. 1	95
West Pasture	24	Aug. 1 to Sept 1	24

Year 2

Pasture	Numbers	Season of Use	AUMs
Bird Coulee	24	June 1 to June 30 Aug 1 to Nov. 1	95
West Pasture	24	July 1 to July 31	24

If monitoring indicates the proposed management is failing to make significant progress toward meeting the standards for rangeland health within two years, hot season grazing would be eliminated. The season of use would be changed to cool season grazing.

Big View Allotment – 09664, Lease 2506716 (Bailey Land & Livestock)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: Yes----The riparian habitat is currently excluded from livestock grazing and is meeting the riparian standards.

Proposed Action: The riparian exclosure would be maintained. The permitted use would continue with 1 cow and 11 AUMs permitted year round.

Churchill Butte Allotment – 19807, Lease 2506711 (Bailey Land & Livestock)

Upland Objectives: - improve vegetation to late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 6 head of cattle and 29 AUMs from June 1- September 30.

Carter Ferry Allotment – 09657, Lease 2506848 (R. Salisbury)

Upland Objectives: - improve vegetation to late seral
- maintain rangeland heath
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 4 head of cattle and 12 AUMs permitted from August 1- November 1.

Cherry Creek Allotment – 09816, Lease 2506870 (Vernon)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 3 head of cattle and 18 AUMs permitted from May 1- October 31.

Evans Bend Allotment – 09797, Permit 2506851 (Stauner)

Upland Objectives: - improve vegetative ground cover to 70 % ground cover on tame grass in pasture D.
- maintain native pastures in late seral.
- maintain rangeland health

Meeting Upland Standard: No

Meeting Riparian Health Standard: Yes

Proposed Action: *River Pastures:* The season of use would be changed so that all pastures bordering the Missouri River would be grazed cool season only. Pastures A1, B, C and D would be grazed from Sept. 15 to April 1. Permitted use would be 32 head of cattle with 78 AUMs permitted. Pasture A has been permitted on a temporary, nonrenewable basis each year because of past problems with livestock feeding on public land and the potential to introduce new weeds and compact soils as a result of this practice. Under the proposed action, permitted use would continue to be allowed on a temporary, nonrenewable basis with 46 AUMs permitted from September 15 to April 1. Under this proposal, the permittee would be required to contact the BLM each year and receive prior approval before grazing cattle in pasture A.

Upland Pastures: The permitted use on the upland pastures (E, F, G, and H) would consist of 20 head of cattle and 99 AUMs permitted year round. Billing would be based on actual use.

A comprehensive noxious weed control plan would be developed to address the rapid spread of noxious weeds that has recently occurred on this allotment. Treatment of weeds is a complex problem because many of the weed infestations are intermingled with woody species. This plan would address treatment of noxious weeds on a site-specific basis in a manner that would not cause harm to woody species or riparian areas.

Grace Bench Allotment – 09864, Lease 2506919 (J. Ayers)

Upland Objectives: - improve vegetation diversity and achieve objective of 50% ground cover of perennial vegetation within 3 years of seeding
- maintain rangeland health

Meeting Upland Standard: No
Meeting Riparian Health Standard: N/A

Proposed Action: Due to degraded rangeland conditions, portions of the allotment would be reseeded to a mix of native grass, forb, and shrub species (80 to 150 acres). The reseeded portion would be rested from grazing for two growing seasons after seeding to improve seedling establishment. Steep bluffs, slopes and coulees would not be seeded.

The permitted use would change from year round use to August 1 - May 1. The permitted numbers would be increased from 2 head of cattle to 5 head. The total AUMs would remain the same with 32 AUMs permitted.

If the initial seeding fails, additional seedings would take place until 50% ground cover of perennial grasses, shrubs and forbs is achieved. This project would include parcels of public land in T25N R11E west ½ of section 6 and T26N R11E SW ¼ of section 31 (appendix M 1.1). The permittee would be responsible for preparing the seedbed and seeding of the restoration site. The BLM would provide seed. The restoration site would be monitored by BLM personnel until vegetation is successfully established. If the first seeding fails, the permittee would be responsible for additional seedbed preparation and seeding. BLM would continue to supply seed.

The restoration site would be monitored for noxious weeds for 2 years after seeding. If noxious weeds invade the site, the BLM would develop a cost share agreement with the permittee to treat the weed infestation. Under this agreement the permittee would spray the weeds and the

BLM would supply the chemical.

Highwood Creek Allotment – 09763, Lease 2506817 (Rettig)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standards: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 1 cow and 7 AUMs permitted on a year round basis.

Morrow Place Allotment – 09811, Lease 2506865 (Salisbury)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standards: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 3 head of cattle and 32 AUMs permitted year round.

Ritland Allotment – 09802, Lease 2506856 (Ritland)

Upland Objectives:- maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standards: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 1 cow and 7 AUMs permitted year round.

Rowe Coulee Allotment – 09767, Lease 2506821 (MacDonald Farms)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standards: Yes
Meeting Riparian Health Standard: Yes

Proposed Action: The permitted use would continue with 9 head of cattle and 108 AUMs permitted year round on the upland parcel. Grazing on the island portion would continue on an alternate basis as follows:

Year 1: spring/early summer use prior to July 1 (March 1- July 1)
Year 2: late summer/early fall (July 1- September 30)
Year 3: fall/winter use after October 1 (October 1- February 28)

The Canyon Allotment – 09692, Lease 2506744 (Diekhans)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 5 head of cattle and 36 AUMs permitted year round.

Vidal Allotment – 02538, Lease 2506899 (Morris)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A

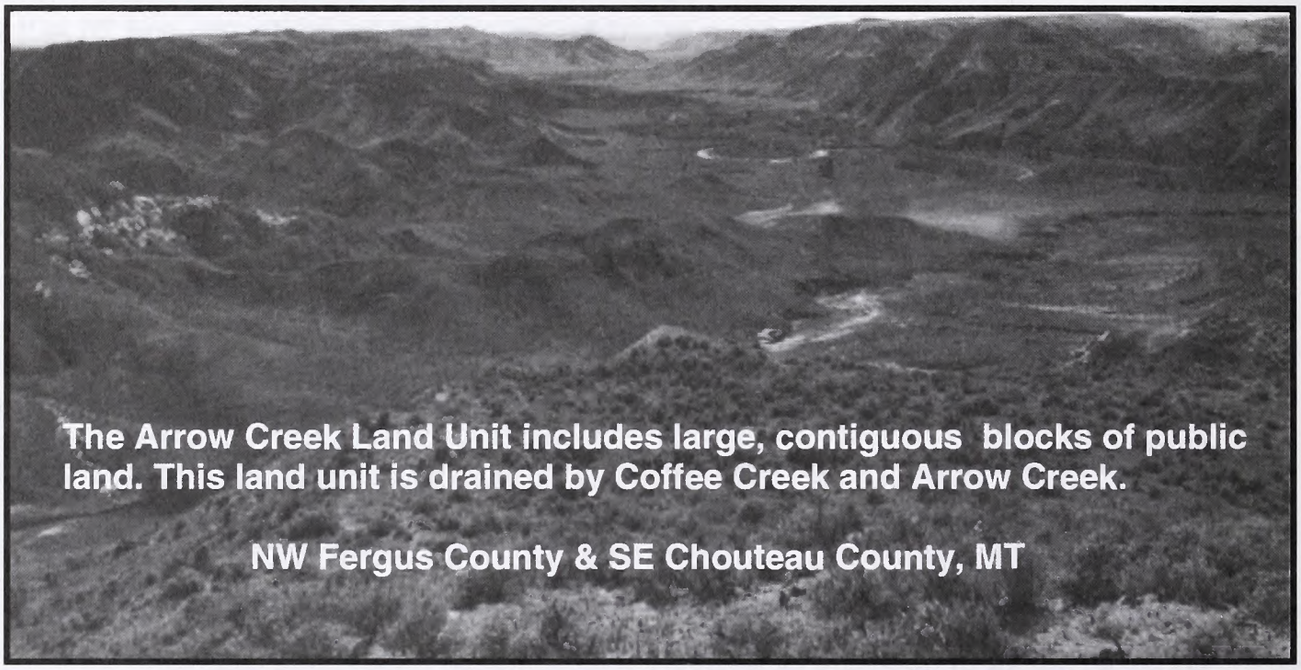
Proposed Action: The permitted use would continue with 1 cow and 12 AUMs permitted year round.

Widow Coulee Allotment – 09841, Lease 2506895 (Urquhart)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 7 head of cattle and 50 AUMs permitted from August 1- February 28.

PROPOSED ACTION FOR THE ARROW CREEK LAND UNIT



Arrow Creek Bench Allotment -09761, Permit 2506815 (Little)

Upland Objectives: - maintain vegetation in late seral
- maintain upland range health
Meeting Upland Standards: Yes
Meeting Riparian Health Standard: N/A

Proposed Action: The permitted use would continue with 13 head of cattle and 153 AUMs permitted year round.

Arrow Creek West Allotment - 09707, Lease 2506759 (Derks)
Arrow Creek East Allotment – 20040, Permit 2506036 (Derks)
Mutton Coulee Allotment – 20039, Permit 2506036 (Derks)

(Arrow Creek East and Arrow Creek West)
Upland Objectives: - maintain vegetation in late seral
- maintain upland range health
Meeting Objectives: Yes
Meeting Riparian Health Standard: No--- Guideline # 15 (control of livestock in Appendix A) is not being followed due to drifting cattle from an adjacent allotment. The unrestricted movement of cattle from the adjacent allotment has the potential to continue adversely impacting riparian conditions in these two allotments.

Proposed Action (Arrow Creek East): The season of use in Arrow Creek East would change from fall use to a variable season of use, based on a 3-year cycle in coordination with grazing management in the Mutton Coulee allotment. The permitted use would continue with 111 head

of cattle and 287 AUMs. Proposed fencing in an adjacent allotment would limit riparian impacts. Two pit reservoirs would be constructed to disperse livestock into the surrounding uplands. The BLM would design and build these reservoirs and the permittee would be responsible for maintaining them. Reconstructing the north/south fence through this allotment has also been proposed. BLM would supply the materials and the permittee would supply the labor for the fence project.

Proposed Action (Arrow Creek West): This allotment would continue to be managed with Arrow Creek East and grazing would follow the same cycle. The permitted use would continue with 28 head of cattle and 111 AUMs permitted. Proposed fencing between Arrow Creek West and an adjacent allotment would limit riparian impacts from trespass cattle.

(Mutton Coulee Allotment)
Upland Objectives: - maintain the vegetation in late seral
- maintain upland range health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: Yes

Proposed Action (Mutton Coulee): The season of use would be based on a 3-year cycle. During the first year cattle would graze during the summer and early fall. During years two and three, grazing would be during the fall and winter. The permitted use would remain the same with 85 head of cattle and 179 AUMs permitted.

Livestock use dates for Arrow Creek East/West and Mutton Coulee would be as follows:

Allotment	**Year 1**	**Year 2**	**Year 3**
Mutton Coulee	June 6-Oct. 1	Oct. 2-Jan. 28	Oct. 2-Jan. 28
Arrow Creek East & West	Oct. 2 to Jan. 28	June 1 to Oct. 1	June 1 to Oct. 1

If monitoring indicates that the proposed management is failing to maintain or achieve standards for rangeland health, and use by Arrow Creek East and West livestock is the major cause, several actions would be undertaken to adjust management. These actions may include:

- Arrow Creek would be fenced and managed as a riparian pasture with cool season grazing only.
- Construction of additional off-site water sources to improve livestock distribution.
- Reverse the grazing rotation sequence (Mutton Coulee allotment would be grazed in the summer for two consecutive years and Arrow Creek East and West would be grazed in the fall for two consecutive years).
- Reverse the grazing rotation sequence (Mutton Coulee allotment would be grazed in the summer for two consecutive years and Arrow Creek East and West would be grazed in the fall for two consecutive years).

Coffee Creek Allotment – 09683, Permit 2506735 (J. Coppedge)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: Yes

Proposed Action: The permitted use would continue with 24 head of cattle and 288 AUMs permitted year round. A division fence would be build between Coffee Creek and Melton Coulee. The BLM would supply materials and the permittee would supply the labor to build the fence.

Dostal Allotment – Lease 09693
Engellant Allotment, Lease 2506745 (P. Bronec)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: Yes

Proposed Action: The Engellant allotment is a 40-acre parcel of public land that would be consolidated with the Dostal allotment and managed in a four-pasture rotation. The rotation would be:

Year 1: North pasture 5/1-7/10, South pasture 7/11-10/31
Southwest and West pastures 11/1-5/1
Year 2: South pasture 5/1-7/10, North pasture 7/11-10/31
Southwest and West pastures 11/1-5/1

The permitted use would remain the same with 48 head of cattle and 190 AUMs.

Evers Bench Allotment – 20002, Permit 2506001 (W.T. Allen)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standards: Yes
Meeting Riparian Health Standard: None Present

Proposed Action: The current use of 1 cow and 12 AUMs would continue to be permitted year round.

Melton Coulee Allotment – 09703, Permit 2506755 (Ellis)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: None present.

Proposed Action: The current permitted use with 13 head of cattle and 157 AUMs permitted year round. A south boundary fence would be constructed as described in the Coffee Creek allotment proposed action.

Slide Coulee Allotment (east) – 09847, Permit 2506087 (Sec.3)
Slide Coulee Allotment (west)– 09847, Permit 2506901 (Sec. 15) (Todd)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: Yes---- However, Guideline # 15 (control of livestock) from an adjacent allotment is not being followed. This use is adversely impacting riparian conditions along Arrow Creek. The proposed fence in the adjacent allotment would limit potential impacts to riparian vegetation along that portion of Arrow Creek located in the Slide Coulee allotment.

Proposed Action: This allotment is split administratively, but is managed as one allotment. The season of use on both portions would continue form 5/1-12/31. The permitted use for the Section 3 portion of the allotment would continue with 94 head of cattle and 373 AUMs. The permitted use for the Section 15 portion of the allotment would continue with 94 head of cattle and 21 AUMs permitted.

Spring Coulee Allotment – 20075, Permit 2506070 (Knox)

Upland Objectives: - improve vegetation to late seral
- maintain rangeland health
Meeting Upland Standard: Yes----The allotment is making significant progress.
Meeting Riparian Health Standard: Yes

Proposed Action: The current permitted use would continue with 119 head of cattle and 358 AUMs permitted 6/10-10/20.

Possible Additional Actions: If monitoring indicates the proposed management actions are failing to maintain or achieve standards for rangeland health, several options would be considered. These could include:

- the season of use may be changed
  (Year 1: 6/10-10/20; Year 2: 7/10-11/20)
- the length of the grazing season would be reduced to 3 months and cattle numbers increased to 172 head (total AUMs would remain the same)

offsite water could be developed in the uplands.

Wilson Coulee Allotment:

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes

Meeting Riparian Health Standard: No significant riparian habitat exists on public land in this allotment. The natural barrier between the Wilson Coulee allotment and two adjacent allotments is inadequate to fully control livestock. Cattle can drift east and southeast from Wilson Coulee allotment into the Slide Coulee and Arrow Creek West allotments. This uncontrolled drift of livestock is adversely impacting riparian areas in the Slide Coulee allotment and has the potential to impact riparian areas in Arrow Creek West.

Proposed Action: The current permitted use would continue with 63 head of cattle and 155 AUMs between 4/1-10/31. The current permitted use on the fall pasture would continue with 39 head of cattle and 54 AUMs between 9/1-12/30.

A fence along the eastern boundary of this allotment would be constructed to stop cattle from moving east and southeast onto other allotments. This fence would be constructed in strategic locations on the west rim of Arrow Creek and in Wilson and Nance coulees (Map 2.2). BLM would supply the materials and the permittee would supply the labor.

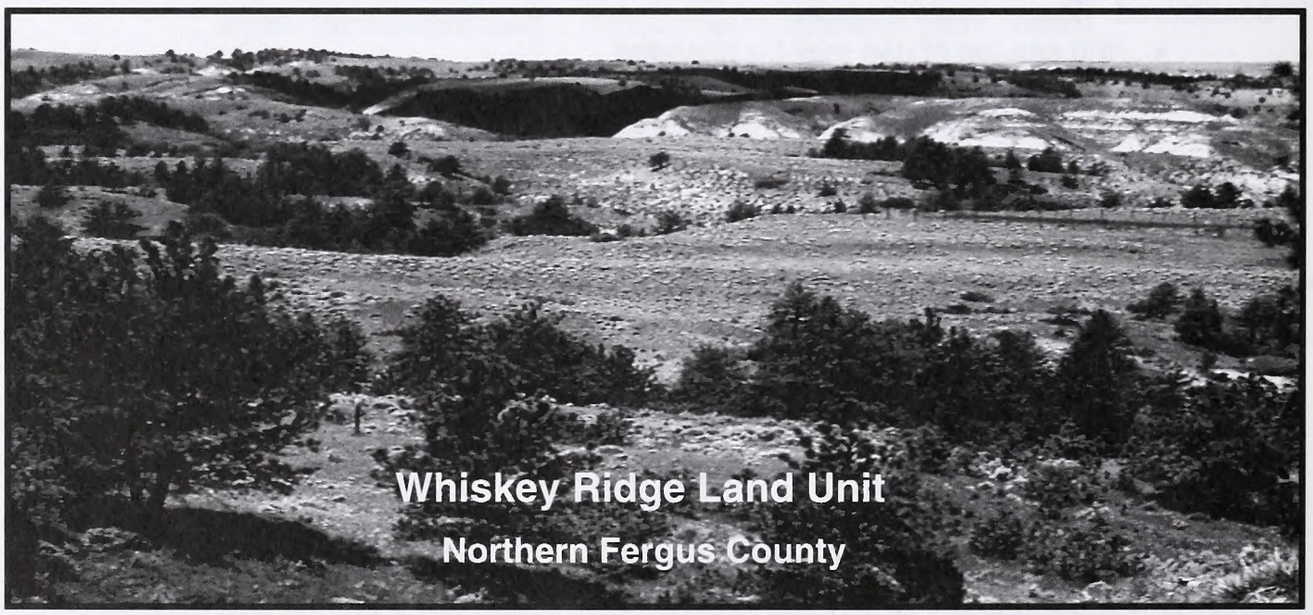
Although the proposed fence would reduce livestock movement into Arrow Creek, the permittee would be required to improve the overall control of his livestock through periodic riding and inspections of livestock locations. Any unauthorized livestock found in Arrow Creek would have to be removed within two days notice. These requirements would become part of the terms and conditions of the grazing lease for the Wilson Coulee allotment.

Woodcock Coulee Allotment – 02517, Lease 2506719 (C. Bronec)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standards: yes
Meeting Riparian Health Standards: N/A

Proposed Action: The current permitted use would continue with 86 head of cattle and 112 AUMs permitted between 5/1-10.30.

PROPOSED ACTION FOR THE WHISKEY RIDGE LAND UNIT



This land unit includes large blocks of public land in the Whiskey Ridge area. This land unit is primarily drained by Dog Creek. A few isolated parcels of public land near the Judith River are included in this land unit. Maps of this land unit are shown in appendix M-3.1-3.4

Blind Canyon Allotment – 20010, Permit 2506009 (B. Bergum)

Upland Objectives: - maintain most vegetation late in seral, move some vegetation to low seral.
- maintain rangeland health
Meeting Upland Standards: Yes. Open grasslands and sagebrush grasslands are meeting the upland standard, except for ridges and benches where pine encroachment is occurring. Some forested areas have high stand densities with decreased productivity of grasses, forbs and shrubs, declining forest health; and potential negative impacts to shallow water tables.
Meeting Riparian Health Standard: N/A

Proposed Action: The current permitted use would continue with 99 head of cattle and 288 AUMs between 5/15-10/15. The existing two pasture rotation grazing system would continue. The pasture rotation would be:

Year 1 & 2: North pasture 5/10-8/26, South pasture 8/27-10/31
Year 3: South pasture 5/10-8/26, North pasture 8/27-10/31

Prescribed burning would be used to manage vegetation and improve forage conditions for bighorn sheep.

Prescribed Fire Resource Objectives:
- achieve early to mid seral conditions in burned areas
- create a mosaic burn pattern
- improve productivity and regeneration of shrubs and forbs
- reduce conifer stand densities and pine encroachment
- maintain and improve overall range and forest health
- improve the relative diversity of seral stages

Once the burn is completed, the area would be rested from livestock grazing for up to two growing seasons. The length of this rest would be dependent on recovery rates and could be longer or shorter. Potential prescribed fire treatment areas are identified on map M 3.5. The area shown on the map represents a general area where burning could occur; specific burn units would be identified within that area. Burn agreements would be developed where prescribed burns overlap onto other lands and these landowners/agencies agree to prescribed fire treatments. Burned areas would be monitored by BLM for noxious weeds for 2 years following the burn. Any new infestations would be treated by BLM for 2 years. Subsequent treatments would be completed through a cooperative agreement between BLM and the permittee.

Dog Creek AMP (Gibbon Place) Allotment – 20033
Permit 2506030 (W.Stulc)

Upland Objectives: - maintain vegetation in late seral
- reduce pine encroachment into open ridges
- maintain rangeland health
Meeting Upland Standards: Yes. Open grasslands and shrublands are meeting the upland standard, except for ridges and flats where pine encroachment is occurring.
Meeting Riparian Health Standard: N/A

Proposed Action: The current use is 81 head of cattle and 199 AUMs permitted from 5/15 to 10/15. The permitted use would change to 120 head from 6/25 to 10/5. Animal Unit Months

would remain the same (199 AUMs). The two pasture deferred rotation grazing system and season of use would remain in place.

The pasture rotation would be:

Year 1: East pasture 6/25-8/15, West pasture 8/16-10/5
Year 2: West pasture 6/25-8/15, East pasture 8/16-10/5

Mechanical treatment is proposed to reduce pine encroachment on forest perimeters. Hand-thinning, piling and pile burning in the Dog Creek allotment would treat ponderosa pine seedlings and saplings to enhance sagebrush/grassland communities for improved range conditions. Potential treatment areas are identified on map M 3.5. The area shown on the map represents a general area where thinning may be done; specific thinning units would be identified within that area. Treated areas would be monitored by the BLM for infestations of noxious weeds for 2 years following treatment. Any new infestations would be treated by BLM for 2 years. Subsequent weed treatments would be completed through a cooperative agreement between the BLM and the permit. Areas that are pile burned would be reseeded by the BLM if soil disturbance indicates natural re-vegetation will not occur.

A drift fence would be constructed in the Dog Creek Allotment to prevent cattle from straying off the allotment and into the bottom of Dog Creek. This fence would be less than ¼ mile in length and would be located in T22N R 17E SW ¼ of section 13 & SE ¼ of section 14. The permittee would be required to build and maintain the fence. The BLM would supply materials.

Reservation Bench Allotment – 10041, Permit 2506037 (Heggem)

Upland Objectives: - improve vegetation to late seral
- maintain 60% vegetative ground cover on tame pasture
- maintain rangeland health

Meeting Upland Standard: No---Due to non-native vegetation and livestock use
Meeting Riparian Health Standard: yes

Proposed Action: Livestock grazing would be administered in a two-pasture rotation from 5/1-11/30 with 24 head of cattle and 169 AUMs. Two grazing sequences would be established based on reservoir water availability and the condition of native pasture. The grazing sequences would be:

Sequence 1: Crested pasture 5/1-7/1, Native pasture 7/2-11/30
Sequence 2: Native pasture and Crested pasture grazed at same time (5/1-11/30)

Sequence 2 would be used during periods of drought or low reservoir water availability and the permittee would be responsible for notifying BLM of these conditions.

Possible Additional Actions: If monitoring indicates the proposed management actions are failing to maintain or achieve standards for rangeland health, several additional actions may be necessary. These additional actions could include:

- developing additional water
- decreasing use on the native pasture during periods of high soil moisture

Also, the crested wheatgrass pasture could be converted back to native vegetation if funding and manpower is available. If this action is implemented, a rest period from grazing for two growing seasons would be necessary to allow for establishment of vegetation.

Seventy-Nine Coulee Allotment – 20079 Permit, 2506076 (T.J. Stulc)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: No significant riparian habitat exists.

Proposed Action: The permitted use would continue with 15 head of cattle and 180 AUMs year round.

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79 Coulee Allotment – 20012, Permit 2506011 (Slivka)

Upland Objectives: - maintain vegetation in late seral
- maintain rangeland health
Meeting Upland Standard: Yes
Meeting Riparian Health Standard: No significant riparian habitat exists.

Proposed Action: The current permitted use would continue with 1 cow and 10 AUMs year round.

Stulc Allotment – 20081, Permit 2506078 (W. Stulc)

Upland Objectives: - maintain most vegetation in late seral, move some vegetation to low seral.
- maintain rangeland health

Meeting Upland Standards: Yes--- Open grassland and shrublands are meeting the upland standard, except where pine encroachment is occurring. Pine encroachment is occurring on many of the forested margins. Some forested areas have high stand densities with decreased productivity of grasses, forbs, and shrubs; declining forest health; and potential negative impacts to shallow water tables.

Meeting Riparian Health Standard: No--The riparian resources in Dog Creek are being impacted because Guideline #15 (Appendix A) is not being followed.

Proposed Action: This alternative would change the permitted use on pastures 1-5 from 5/1-11/30 to 5/10-11/15. Permitted cattle numbers would be changed from 120 head to 140 head. The total AUMs would remain the same (498).

The grazing system would continue to be a modified rest rotation with two cattle herds rotated through five pastures. Because of terrain and water limitations, the herd would be split during most of spring and summer and would be brought together in the fall.

Under this grazing system, rotations would vary by year. Each year, a different pasture would be rested. Under this system the permittee could graze from 5/1-11/30 on some years, as long as the total number of AUMs is not exceeded.

The following table shows the current grazing and rest periods:

Year	May 1 →		November 30	Rest Pasture
1	pasture 2 →	pasture 1& 3 (herd split) →	pasture 4 (herd joined)	5
2	pasture 1 →	pasture 2 & 5 (herd split) →	pasture 3 (herd joined)	4
3	pasture 5 →	pasture 4 & 1,(herd split) →	pasture 2 (herd joined)	3
4	pasture 4 →	pasture 3 & 5 (herd split) →	pasture 1 (herd joined)	2
5	pasture 3 →	pasture 2 & 5 (herd split)→	pasture 3 (herd joined)	1

Under the proposed action, the beginning and ending dates would change and two herds would be rotated through the pastures as follows:

Year	May 10 →		November 15	Rest Pasture
1	pasture 2 & 4 →	pasture 1 & 3 →	pasture 1 & 4	5
2	pasture 1 & 2 →	pasture 2 & 5 →	pasture 3 & 5	4
3	pasture 2 & 5 →	pasture 1 & 2 →	pasture 1 & 4	3
4	pasture 1 & 5 →	pasture 1 & 4 →	pasture 3 & 5	2
5	pasture 3 & 4 →	pasture 2 & 5 →	pasture 3 & 5	1

Fall and winter pastures would be permitted as year round use with 13 head of cattle and 156 AUMs authorized. These pastures are primarily private and leased private lands intermingled with small parcels of public land.

At the present time the State of Montana is proposing to purchase the base private property and other adjacent private lands on the Stulc Ranch. If this purchase occurs, the State would attach conservation agreements to improve hunting access and wildlife management and sell the land.

The BLM would consider several actions if this purchase occurs.

- Dog Creek may be managed as a separate riparian pasture. The grazing use in the riparian pasture would be set so that the majority of grazing use occurs during the cool season. The steep topography in this area would limit the need for fencing. Two to three short drift fences would be required along the breaks above Dog Creek. These fences would be no more than ¼ mile in length.

- If the private land (Jack Bergum property) that is located in sections 12 & 13 of T22N R17E is purchased by the State, the BLM would coordinate with Montana Fish, Wildlife, and Parks to evaluate the potential to manage this land as an additional pasture in the grazing plan. To improve access to water, fences may be altered in the SE ¼ of section 12 and the NW ¼ of section 12 so that livestock can access water developments on lands administered by the BLM. These fences are currently on or near the property line between BLM and private land (Map M-3.2). After fences are relocated, 80-150 acres of BLM administered land would be fenced into the new pasture.

- The rest rotation grazing system may be modified. The season of livestock use and grazing rotation schedule may be altered to improve management and/or improve wildlife habitat.

Prescribed burning would be used to manage vegetation and improve wildlife habitat.

Prescribed Fire Resource Objectives:
- achieve early to mid seral conditions in burned areas
- reduce stand densities of conifers and reduce pine encroachment on forest edges
- create a mosaic burn pattern of burned and unburned
- maintain overall range and forest health
- improve the relative diversity of seral stages.

Once the burn is completed, the area would be rested from livestock grazing for up to two growing seasons. The length of this rest would be dependent on recovery rates and could be longer or shorter. Potential prescribed fire treatment areas are identified on map M 3.5. The area shown on the map represents a general area where burning could occur; specific burn units would be identified within that area. Burn agreements would be developed where prescribed burns overlap onto other lands and these landowners/agencies agree to prescribed fire treatments. Burned areas would be monitored by BLM for noxious weeds for 2 years following the burn. Any new infestations would be treated by BLM for 2 years. Subsequent treatments would be completed through a cooperative agreement between BLM and the permittee.

If monitoring indicates the proposed management is failing to maintain or achieve the standards for rangeland health, the pasture rotation sequence may be altered, provided that one pasture continues to be rested each year.

Whiskey Ridge Allotment – 02528 & 15232, Permit 2506008 (D. Bergum)

Upland Objectives: - maintain most vegetation in late seral, move some vegetation to low seral.
- maintain rangeland health

Meeting Upland Standard: Yes. Open grassland and shrubs are meeting the upland standard except for places where pine encroachment is occurring. Pine encroachment is occurring on most of the forested margins. Some forested areas have high stand densities with decreased productivity of grasses, forbs, and shrubs; declining forest health; and potential negative impacts to shallow water tables.

Meeting Riparian Health Standard: No---The riparian standard is currently not being met in this allotment. Guideline #15 is not being followed and is impacting riparian areas on an adjacent allotment.

Proposed Action: In the Whiskey Ridge allotment, the current permitted use would continue with 112 head of cattle and 397 AUMs between 5/15-9/15.

In the Whiskey Ridge 5a allotment, the current permitted use would continue with 1 cow and 8 AUMs between 4/1-12/31.

These allotments would be grazed in a rest rotation system and rotations would vary by year. Each year a different pasture would be rested.

The proposed grazing rotation sequence for the Whiskey Ridge allotment would start May 15 and end September 15.

The rotation sequence would be:

Year	May 15 → Sept. 15	Rest Pasture
1	past. 1 → past. 2 → past. 3-b & 3-a (herd split) → past. 4	4
2	past. 2 → 3-b & 3-a (herd split) → past. 4 (herd joined)	1
3	past. 3-b & 3a (herd split) → past. 4 (herd joined) → past. 1	2
4	past. 4 → pasture 1 → pasture 2	3-b

Pastures 5a and 5b contain private cropland and can only be grazed after harvest.

Prescribed burning would be used in this allotment to manage vegetation, improve wildlife habitat, and reduce pine encroachment in shrub/grassland communities.

Prescribed Fire Resource Objectives:

- achieve early to mid seral conditions in burned areas
- reduce stand densities of conifers and reduce pine encroachment on forest edges
- create a mosaic burn pattern of burned and unburned
- maintain overall range and forest health
- improve the relative diversity of seral stages.

Once the burn is completed, the area would be rested from livestock grazing for up to two growing seasons. The length of this rest would be dependent on recovery rates and could be longer or shorter. Potential prescribed fire treatment areas are identified on map M 3.5. The area shown on the map represents a general area where burning could occur; specific burn units would be identified within that area. Burn agreements would be developed where prescribed burns overlap onto other lands and these landowners/agencies agree to prescribed fire treatments. Burned areas would be monitored by BLM for noxious weeds for 2 years following the burn. Any new infestations would be treated by BLM for 2 years. Subsequent treatments would be completed through a cooperative agreement between BLM and the permittee.

If monitoring indicates the proposed management is failing to maintain or achieve standards for rangeland health, the pasture rotation sequence may be changed, provided one pasture is rested each year.

2.2.2 Summary of Proposed Projects

- One half mile of fence would be constructed between Melton Coulee and Coffee Creek allotments (east ½ of section 9, T20N R15E). The BLM would supply fence material and the Coffee Creek allotment permittee would supply labor. Future fence maintenance would be the responsibility of the permittee.

- Two miles of fence would be constructed on the eastern boundary of Wilson Coulee allotment. This fence would be constructed in strategic locations on the eastern rim of Arrow Creek (east ½ of section 6, T21N R15E) and in Engellent and Nance Coulee (NW¼ section 7, T21N R15E). The BLM would supply fence materials and the permittee would supply labor. Future fence maintenance would be the responsibility of the permittee.

- Prescribed burning would be completed to improve upland/forest health, improve wildlife habitat, and reduce encroachment of pine on Stulc, Whiskey Ridge, and Blind Canyon allotments. Mechanical treatments in Dog Creek allotment would reduce encroachment of pine onto sagebrush/grassland communities. Potential prescribed fire or mechanical treatment areas are identified on map M-3.5. The areas shown on the map represent general areas where treatments may be done; specific units would be identified within those areas. BLM would complete the burns and conduct post fire monitoring. Noxious weeds infestation would be treated by BLM for two years. Subsequent weed treatments would be the responsibility of the permittee.

- The location of pasture fences in the Stulc allotment may be changed to improve management and/or conditions of resources. Specific changes would depend on the ownership status of the base property in the future. Some pastures may be reduced or increased in size and fences may moved so that water developments are located within a certain pasture. A separate riparian pasture may be created along Dog Creek.

- Two pit reservoirs would be constructed in Arrow Creek East to disperse livestock away from Arrow Creek and into the surrounding uplands. Locations of the projects would be in T22N R15E NW ¼ of Sec 5 and in T22N R15E SW ¼ Sec 5. BLM would survey and design projects. BLM would also complete the projects. The permittee would be responsible for maintaining the projects.

- Deteriorated rangeland in the Grace Bench allotment would be restored through seeding and rest. This project would include portions of land in T25N R11E west ½ of section 6 and T26N R11E SW ¼ of section 31. BLM would supply seed. The permittee would prepare seedbed, seed plants and supply labor, equipment, and fuel.

- A drift fence would be constructed in the Dog Creek Allotment to prevent cattle from straying off the allotment and into the bottom of Dog Creek. This fence would be less than ¼ mile in length and would be located in T22N R 17E SW ¼ of section 13 & SE ¼ of section 14 (on the rim directly above the south side of Dog Creek). The permittee would be required to build and maintain the fence. The BLM would supply materials for construction of the fence.

Regardless of funding and range improvement projects, permittees must ensure that livestock are managed according to the guidelines (Appendix A) and actions are taken to insure allotments not meeting standards will begin to make significant progress towards meeting standards by the start of the 2004 grazing season. Maintenance for all existing and proposed projects would be the responsibility of the permittees/leasees. A two-year livestock grazing rest period may be required after prescribed burning. The actual rest period would depend on recovery rates of each site as determined through monitoring. Range improvement projects are not limited to the list provided above, additional projects may be completed in order to improve management and meet rangeland health standards.

Cultural surveys would be conducted prior to implementation of range improvement projects including prescribed fire projects and vegetation treatments. A Noxious weed coordinator would conduct a risk assessment prior to initiation of prescribed fire treatments. Monitoring of noxious weeds would be conducted for two years following any surface disturbance. Visual resource clearances would also be obtained prior to implementation of projects. Any surface

disturbance (including Rx fire) that permanently removes existing vegetation from an area larger than ¼ of an acre would be reseeded and native vegetation reestablished.

2.2.3 Weeds

Alternative 2 would implement an aggressive, integrated weed control effort. Much of the planning area would be encompassed in a Weed Management Area (WMA) as identified in the Upper Missouri River Breaks National Monument: Guidelines for Integrated Weed Management. Establishment of the WMA would facilitate cooperation among landowners and various state and federal agencies, and provide guidance for a more proactive weed control program. Noxious weeds would be categorized by priority based on presence, threat to resources, and potential for spread.

Category 1 noxious weeds are currently established and generally widespread throughout the watershed area. Management actions would include containment and suppression of existing infestations and prevention of new infestations.

- Russian Knapweed
- Leafy Spurge
- Canada Thistle

Category 2 noxious weeds have recently been introduced into the watershed or are rapidly spreading from their current infestation areas. Management actions would include containment of known infestations and eradication where possible.

- Spotted Knapweed
- Perennial Pepperweed
- Whitetop (Hoary Cress)
- Black Henbane
- Poison Hemlock
- Field Bindweed

Category 3 noxious weeds have not been detected in the watershed area or may be found only in small, scattered, localized infestations. Management includes early detection and immediate action to eradicate infestations.

- Salt Cedar
- Purple Loosestrife
- Dalmation Toadflax
- Houndstongue
- Baby's Breath

Noxious weed inventory and monitoring within the watershed would be a continual, dynamic workload accomplished by permanent and seasonal BLM employees, private landowners, and cooperating agency personnel. Inventory and monitoring data would be compiled by the LFO weed specialist and used to analyze the effectiveness of weed control efforts, project infestation trend patterns, and provide guidance for future weed control planning and implementation.

The chemical component of the integrated weed control program would be closely monitored by the LFO weed specialist. All herbicide applications would utilize BLM approved herbicides (BLM

annually revises an approved herbicide formulation list) by experienced, licensed applicators; all applications would comply with label restrictions and guidelines. BLM would utilize permanent and seasonal employees to implement the site-specific herbicide prescriptions outlined in the Monument Guidelines for Integrated Weed Management and additional immediate application requirements, which may be identified.

Biological control efforts would continue through release, dissemination, and monitoring of newly available and established biocontrol agents. BLM would continue a cooperative relationship with the Agricultural Research Service (ARS) by providing suitable experimental and research sites and assisting with associated biocontrol projects. Biological control would continue to be the primary tool for control of Category 1 weeds.

The vast majority of noxious weeds in this watershed area are contained within the Upper Missouri National Wild and Scenic River corridor (UMNWSR). Noxious weeds have been identified on uplands within the watershed and continued inventory and monitoring would provide upland infestation trend data. BLM would continue to develop cooperative agreements with livestock grazing permittees for noxious weed control on upland weed infestations. Under these agreements, the BLM would provide the proper type and amount of herbicide and the permittee would apply the herbicide. Application would be made by the properly licensed permittee or contracted to a licensed applicator at the permittee's cost.

Noxious weed control measures would apply to all prescribed fire treatment areas. Pre-and post-burn inventories / assessments would indicate if weed pretreatment and/or continued post-burn weed treatment is needed. Noxious weed infestations would be treated by BLM before prescribed burning. During the livestock grazing rest period of two growing seasons, BLM would continue weed treatment as necessary. After the livestock grazing rest period, BLM would work with permitees in accordance with the cooperative weed control agreements discussed above.

2.2.4 Monitoring

Permittees would be requested to conduct yearly monitoring on key upland and riparian sites (Appendix C). BLM would conduct monitoring on these same key sites on a schedule depending on the health rating of the site (Appendix D).

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2.3 Alternative 3 - No Livestock Grazing

This alternative would remove domestic livestock grazing from the public lands in the planning area. Grazing permits/leasees would expire based on the expiration date listed on each permit/lease. Projects to reduce fuels and improve forest health would not occur under this alternative. There would be no new range improvements or rangeland restoration projects.

2.3.1 Vegetation Management (Riparian Health, Upland Health)

Livestock grazing permits and leases would not be renewed and grazing would cease as permits/leases expire. Vegetation would receive light levels of grazing from wildlife but domestic grazing would no longer occur. The majority of fences and other range improvements would be allowed to deteriorate or would be removed as funding and staffing allow.

2.3.2 Noxious Weeds

Noxious weeds would spread at greater rates since the vast majority of weed control is completed by grazing permitees/leases.

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2.4 Management Common to All Alternatives

The following guidance will continue regardless of the alternative selected. All alternatives would be required to comply with all applicable BLM laws, rules, regulations, and policy. Standards for healthy rangelands would be achieved.

2.4.1 Wildland Fire

Wildland fire suppression will be in accordance with the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment For Montana and the Dakotas (July 2003), the State Director's Interim Guidance for managing the Upper Missouri River Breaks National Monument (June 2001), and the Central Montana Fire Zone Fire Management Plan for Lewistown and Malta Field Offices (draft Feb 2001).

This planning area is in the Breaks, fire polygon C1. The C designation identifies areas where fire is a desired ecosystem management tool, but current vegetative condition creates constraints on use. Fire could be a positive influence in much of this area and restoration of natural fire regimes will be encouraged where practical. However, each fire occurrence will have special consideration. Obvious concerns focus around structural developments, croplands, livestock and livestock forage needs. Social and political considerations will dictate how each fire occurrence will be managed. Appropriate fire suppression based on current fire danger, resource availability and predicted weather will be used to ensure safety of fire suppression personal, reduce cost of fire suppression and provide an opportunity to return fire to its natural place in the ecology of the area.

2.4.2 Black Tailed Prairie Dogs

The known black tailed prairie dog towns in the planning area occur in the JVP RMP portion of the landscape (Arrow Creek landscape unit). The JVP RMP directs that the BLM will maintain or manage prairie dog towns on BLM lands based on the values or problems encountered. Current BLM policy states that loss of prairie dog habitat on private land may be compensated for by developing additional habitat on BLM land in the vicinity of the habitat loss.

2.4.3 Bald Eagles, Pallid Sturgeons, and Mountain Plovers

Bald eagle and pallid sturgeon habitat on the Missouri River and potential mountain plover habitat through out the watershed is subject to guidance from the both the JVP RMP and the West HiLine RMP. The emphasis for habitat maintenance and development will be on present and potential habitat for sensitive, threatened, and/or endangered species. No action will be initiated on BLM land which will jeopardize any candidate or federally listed threatened endangered plant or animal. Further emphasis for mountain plover habitat within black tailed prairie dog towns is provided in section (2.4.3) above.

Chapter 3.0 Affected Environment

Section Content

3.1 Coniferous Forest

Forested vegetation types include ponderosa pine and ponderosa pine/Douglas-fir. Both vegetation types are common in the Whiskey Ridge Unit of the planning area, but are very limited in the Arrow Creek and Upper River land units. Ponderosa pine is common on south slopes and ridges and the ponderosa pine/Douglas fir type is common on steep north facing slopes. Forested areas are generally patchy and disconnected because of the broken topography of the Whiskey Ridge Unit.

Comparison of fixed-point photo series from 1980 to present indicates that conifer densities have been increasing in many forested areas. Pine seedlings and saplings are expanding into rangeland areas on forest margins. Heavy stand densities cause competition among conifers, with associated declines in forest health and decreased productivity of understory vegetation such as grasses, forbs, and shrubs. Drought has exacerbated the condition. Understory conifers contribute to fuel loadings that create a continuous fuel bed from the ground to the canopy. Wildland fire can be severe in these areas.

The encroachment of ponderosa pine into open parks reduces biodiversity, crowds out sagebrush/grassland habitat and creates an increase threat of severe fires due to an increase in the continuity of fuels.

3.2 Rangelands

Rangelands vegetation consists of sagebrush grasslands, grasslands, and lightly vegetated badlands. Mixed shrub communities are common in woody draws and flats throughout all of these vegetation types. Common grasses and grasslike species include bluebunch wheatgrass,

green needle grass, western wheatgrass, prairie junegrass, blue grama, prairie sandreed, Sandberg bluegrass, and threadleaf sedge. Introduced grasses are found in some areas, either in pure stands or intermingled with native species. Common introduced perennial grasses include crested wheatgrass, smooth brome and intermediate wheatgrass. Introduced annual grasses include cheatgrass and Japanese brome. Common shrubs include big sagebrush, silver sagebrush, saltbrush, greasewood, rabbitbrush, and prickly pear cactus. There are no known occurrences of threatened, endangered, or sensitive plants in the watershed. Appendix G lists common plants in the planning area.

3.3 Soils

The planning area is located in two geographic areas: the western sedimentary plains and the western glaciated plains. These areas, known as Major Land Resource Areas (MLRA) by the Natural Resources Conservation Service have similar soils, vegetation, climate, and geology. The western glaciated MLRA formed under recent glaciation and encompasses the Upper River land unit. Glacial till underlies much of this MLRA. The terrain in this area is level to rolling and forms breaks along tributaries to the river. Few conifers are present and badlands are not common except near major drainages such as Arrow Creek. Soils in this area are very deep, well drained and range from clayey to loamy texture.

The western sedimentary plains MLRA encompasses the eastern half of the Arrow Creek land unit and all of the Whiskey Ridge land unit. Unlike the western glaciated MLRA, this area was not glaciated during the last glaciation period. Badland, thinbreaks, and clayey range sites are common in this area.

For a more detailed list of soils consult the Fergus or Choteau County soil surveys. These surveys are available at the Lewistown Field Office or the NRCS office in Lewistown, MT.

3.4 Noxious Weeds

Noxious weed infestations on public land within the landscape area are primarily concentrated along the Wild and Scenic River. Several species of noxious weeds have been identified within the planning area; the largest areas of infestation are occupied by leafy spurge and Russian knapweed.

The BLM has been actively involved in an integrated weed control program on the river since the early 1980s utilizing chemical and biological control. Leafy spurge and Russian knapweed infestations have grown dramatically during the past two decades, and chemical control efforts have been hindered by label restrictions, high water table restrictions, potential non-target desirable species damage, and seed dispersion by the river. Biological control of leafy spurge shows promise on large, dense stands which have proven very difficult to control using chemical alone. Numerous releases of leafy spurge and spotted knapweed biocontrol agents have been made along the river; established insect populations are monitored, collected, and dispersed by BLM personnel. Effective biological control agents are currently not available for Russian knapweed.

Noxious weed species of concern which have recently been identified along the upper Missouri River are:

- Salt Cedar
- Purple Loosestrife

- Dalmation Toadflax
- Perennial Pepperweed
- Whitetop (Hoary Cress)
- Babys Breath
- Houndstongue

Infestations of the weeds listed above are small and isolated; a concentrated effort would be made to eradicate all existing infestations and prevent their further introduction or spread.

Salt Cedar, a highly aggressive shrub, was recently discovered in Dog Creek and Arrow Creek. This plant poses a major threat to riparian areas and the diversity of riparian vegetation.

The river weed plan (Guidelines for Integrated Weed Management), an intensive, site-specific weed management plan which encompasses the Upper Missouri River Watershed area, has been developed by the monument staff weed specialist. This plan, which is available for review at the Lewistown Field Office, will be made a part of this watershed plan, and will provide guidance for continued weed management efforts within the watershed area.

3.5 Upland Range Health

Allotments were assessed for upland range health in 2001 and 2002. Rangeland health is defined as the degree to which the integrity of the soil, vegetation, water and air as well as the ecological process of the rangeland system are balanced and maintained (BLM Tech. Ref. 1734-6).

Upland health was determined using existing permanent study plots. These study plots were evaluated for ecological site index, upland range health indicators, and soil surface factors. Uplands on 34 of these allotments are meeting standards. Four allotments are not meeting standards. Livestock is a significant factor on the three of the four allotments that are not meeting upland standards. Noxious weeds and non-native grasses are the reason that the remaining allotment is not meeting upland standards. Appendix D and M displays a list of study results by allotment.

Hail and drought has also influenced the condition of vegetation in some areas. During the 2001 growing season, moisture was below average. To separate the impacts of drought and hail from livestock use, the evaluation team looked at fence line contrasts and similar sites under different management to discern the amount of impact caused by livestock management verses impacts of drought or hail. Precipitation records from a nearby weather station were also

reviewed. A summary of these records is shown in Appendix G. The following is a list of upland health ratings by acres and percent of total acres for each category.

3.5.1 Status of Upland Range Health

33, 370 acres of public land (90% of the landscape) are meeting the upland health standard (Appendix I).

3,673 acres of public land (10% of the landscape) are not meeting the upland health standard (Appendix I).

Seral stages and ecological site index scores were determined on upland sites using the NRCS ecological site index technical guides for each ecological site. This method assesses the seral stage of an ecological site and provides a scoring system. The higher the score, the higher the plant successional stage (seral stage). Changes in plant communities (known as plant succession) are characterized by different types of plant communities replacing other types of plant communities. A plant community reaches climax or Potential Natural Community (PNC) when it reaches a point that the community maintains itself and is relatively stable. Different stages of succession are called seral stages. The amount and type of disturbance, the site, and the amount of rest following disturbance often dictate the seral stage of the plant community. In prairie grassland ecosystems, areas that have prolonged disturbance with little rest have a high abundance of annual forbs and weeds, some annual grasses, and shallow rooted perennial grasses of short stature. These conditions would be termed low seral conditions. With the NRCS ecological site index system, the higher the score, the higher the seral stage.

Areas without recent disturbance or light disturbance followed by periods of rest usually reflect late seral or potential natural community. This stage is characterized by tall, deep rooted grasses, fewer forbs and weeds, and in some cases a shrub overstory. Prairie ecosystems evolved with periodic disturbance in the form of fire, grazing, hail, and drought followed by periods of favorable growing conditions. In some cases a lack of some type of disturbance over a period of decades can cause succession to move backwards towards lower or early seral conditions. Conversely prolonged disturbance without adequate rest for plant recovery can also lead to early seral conditions. The means to achieving the upland standard for range health center around managing grazing to allow some disturbance followed by periods of rest during the growing season.

On a site-specific scale, late seral or PNC conditions are associated with healthy rangelands and early (low) seral conditions are often associated with unhealthy rangelands. However on a larger scale it is important to have a mix of seral stages present to provide diverse habitat. The means to achieving the upland range health standard involves maintaining a high percentage of the plant community in late seral or PNC conditions, however it is acceptable for a small percentage of the total acreage to be in early seral conditions such as livestock watering points, prairie dog towns, etc. Seral stages are shown by allotment in appendix D.

Erosion condition class determinations (soil surface factors) were also completed to assess erosion conditions on rangelands. The method uses seven factors to assess the condition of the soil surface. Factors such as the amount of bare ground, amount of rilling, gulling or other forms of erosion are assessed and scored. These criteria are indicative of the amount of erosion that is occurring. The majority of the acreage in the planning area (95%) rated in the stable or slight erosion class category.

The BLM also uses rangeland health indicators along with other methods to assess and communicate problems with rangeland health. These indicators consider the structure and function of the ecosystem rather just one component such as plant species composition or soil surface factors. These indicators provide no scores and taken alone are not a sole indication of rangeland health but when viewed with other information provide clues to the sites health. These indicators are important means of communicating problems or successes to permittees and the public.

The indicators used are related to the amount or type of:

Biotic

- plant community diversity
- plant community structure
- photosynthesis activity
- plant status
- presence of exotic plants (weeds)
- seed production
- nutrient cycling

Physical

- flow patterns
- soil movement by wind or water
- soil crusting and surface sealing
- soil compaction
- rills
- gullies
- amount of ground cover
- cover distribution

A determination was made based on the indicators and a review of the results of the other studies. Grazing allotments were placed in one of three categories: meeting the standard, not meeting the standard but making significant progress, and not meeting the standard. Significant progress is determined when an allotment with degraded conditions is showing a strong upward trend. Summaries of rangeland health determinations are displayed in appendix M.

3.6 Livestock Grazing Management

There are forty allotments within the planning area permitted to 32 permittees. All grazing permits are for cattle. Total permitted use in the planning area is 5,185 AUMs. Allotment Management Plans (AMP) have been implemented on five allotments. Appendix K displays the allotments, type of use, season of use, AUMs and other information. Appendix H displays the current Allotment Management Plans and management plan status.

3.7 Recreation

The Arrow Creek landscape is located in the Judith-Valley-Phillips Management Area (JVP 1992). The lands within the Upper Missouri National Wild and Scenic River corridor are managed under the Upper Missouri National Wild and Scenic River Management Plan (1976, amended 1994). The lands in the planning area are managed under the Judith-Valley-Phillips Resource Management Plan (JVP-RMP 9/92) and are within the Judith Recreation Management Area (RMA MT060-07).

This extensive recreation management area (RMA) allows for dispersed and unstructured recreational activities on the public land in the planning area. Participation in specific

recreational activities on the BLM lands in the planning area consist of hunting, wildlife photography, wildlife viewing, sightseeing, and some driving for pleasure where access to public lands is available with the majority of use occurring during the summer or during the fall hunting season.

Hunting opportunities for the general public in the planning area are somewhat limited due to lack of legal access, but none-the-less account for the highest percentage of overall recreation use in the uplands of the Missouri Breaks. This trend would be expected to continue. Outfitters provide deer, sheep, and elk hunting trips to their clientele from their ranch headquarters on a day-use basis in the planning area. No overnight camping on public land occurs by the outfitting operators at the present time.

Currently, the BLM has authorized one Special Recreation Permit for an upland commercial outfitting operation on the public lands in the planning area. This permit is issued to the outfitter with a valid State of Montana outfitter license and is authorized at the discretion of the Lewistown Field Manager. Additionally, there is one outfitter operating a motorized vehicle tour business within the UMNWSR on the south side of the river. Outfitters pay an annual fee of 3% of their adjusted gross revenue (minimum $80) for the privilege of utilizing the public land in their commercial hunting business.

There are no Wilderness Study Areas (WSA) within the planning area.

There are an unknown number of miles of existing roads and vehicle ways (two-tracks) in the watershed planning area. The limited public access to the BLM lands attributes to the low number of visits associated with sightseeing and driving for pleasure activities.

3.8 Visual Resource Management (VRM)

Public land within the planning area has been assigned a Visual Resource Management (VRM) class based on a process that considers scenic quality sensitivity to changes in the landscape and distance zone. This is accomplished by using the four primary elements found in the environment: form, line, color, and texture. There are four VRM classes numbered I to IV (Visual Resource Management Program, Bureau of Land Management, 1980). The lower the number of the class, the more sensitive and scenic the area. Each class has a management objective that prescribes the level of acceptable change in the landscape. Since the major portion of lands in or near the planning area are rugged river breaks or private lands, the planning area is primarily within the first two of the four classes (JVP-RMP, 1992).

Most of the public lands in Arrow Creek watershed have a Class II VRM classification, although some Class III and IV are located on the bench above the Judith River. The level of change to the characteristic landscape in this classification should be low to Class II lands. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The level of change to the characteristic landscape on Class III lands would be evident, but should be moderated by using the basic elements. Any management activity should remain subordinate to the existing landscape.

3.9 Off-Highway Vehicles (OHV)

All lands in the planning areas (except the Wild & Scenic River boundary) have a designation of limited year-around, which is in accordance with new direction that was recently implemented (OHV EIS and Plan Amendment for Montana, North and South Dakota 2001). The direction outlined in the OHV Plan Amendment prohibits cross-county vehicle travel except for administrative purposes. Previous management direction in the West Hi-Line and Judith Valley-Phillips RMPs was amended by the OHV EIS/Plan Amendment.

The following are exceptions to the cross-country vehicle travel prohibition:

- Travel for military needs, fire suppression, search and rescue or law enforcement emergency vehicles.
-
- BLM permittees/leasees may travel cross-country for administration of their permit.
- Snowmobiles are not impacted by this direction.
- BLM public land users may travel 300 feet from existing roads and trails after locating their campsite in a non-motorized fashion.
- This policy does not apply to areas designated as intensive use areas (none in this planning area).

As noted above, permit/lease holders, are allowed to travel cross-county for administration of their permit/lease. Administration of a grazing permit/lease includes travel to repair range improvements and other tasks directly related to management of a grazing allotment such as monitoring of livestock and forage conditions, placing salt, moving cattle etc. The BLM may allow the state to travel cross-country for administrative purposes in cases where no roads are available to access state lands.

In addition, to the direction listed above, there are travel restrictions in the Wild and Scenic River Corridor as to the type of vehicle, where it may travel, or when it can travel.

Brochures explaining specific details of the BLM off-highway vehicle direction are available at BLM offices.

Road inventory and condition analysis will be deferred to the Monument RMP/EIS planning effort. On lands within the Monument, the BLM State Director's Interim Management Guidance would apply until a Monument RMP/EIS is completed and a Record of Decision is signed.

3.10 Wildlife Resources

The variety of vegetation along the river and its associated areas provides habitat for a diverse wildlife population. In a relatively small area the habitat may include everything from deciduous tree stands with other associated riparian species, mixed coniferous forest, sagebrush steppe, cliffs, and agricultural land along the rim of the canyon. Over 60 mammals, 233 species of birds and 20 species of amphibians and reptiles inhabit these areas. The river itself is home to 48 species of fish ranging from the 2 ounce minnow to the 140 pound paddlefish.

3.10.1 Mammals

Probably the most significant of the mammals are bighorn sheep, mule deer, whitetail deer, pronghorn antelope, and the special status black tailed prairie dog. Several water obligate species are also very common on or near the river, beaver have become very common on portions of the river particularly since the value of furs dropped over the last couple of decades. The beaver population has become somewhat controversial with the recent efforts to get cottonwood stands reestablished. The canyon areas also provide habitat for good numbers of predator species. Mountain lions and coyotes appear to be doing very well in the breaks. Smaller predators such as foxes, skunks, and raccoons are relatively abundant in some areas of the watershed. The hoary bat, big brown bat, little brown bat, long eared bat, long-legged bat, and Townsend's big eared bat may occur in the watershed.

The black tailed prairie dog was ruled to be warranted for listing but precluded by the USFWS in February of 2000. The known prairie dog towns in the planning area are concentrated on the flats along the east side of Arrow Creek. The dog towns are located in Arrow Creek East, Slide Coulee, and Spring Coulee grazing coulee allotments. In October of 2002 the prairie dog towns in the Arrow Creek drainage were identified and recorded by walking around the perimeter of each town with a Global Positioning System (GPS). There are approximately 21.8 acres of active prairie dog town on BLM land documented on all or portions of 7 different towns (map M2.3).

Most of the dog towns on public land have reached total potential expansion. Due to the steep topography and the small size of the public land parcels in this area, any further expansion of these towns is limited to private land. Because of the limitations for prairie dog expansion on public land the opportunity for black footed ferret occupation is minimal. This isolated complex provides much opportunity for species such as burrowing owls, ferruginous hawks, and mountain plovers that are known to be associated with dog towns. Prairie dog towns provide an island of unique habitat that attracts a large number of predator species, particularly coyotes and badgers.

Rocky Mountain bighorn sheep were released near the planning area in 1980. This herd continues to survive and prosper. Bighorn sheep numbers appear to be appropriate throughout their range and have been expanding into available adjacent habitat. Expansion of bighorn sheep is being discouraged to the south and west of the Dog Creek drainage because small bands of domestic sheep occur on deeded land in this area. Since disease from domestic sheep can easily transmitted from domestic to wild sheep, every attempt is being made to keep bighorns from intermingling with the domestic stock.

Currently bighorns are common in the Reservation Bench, Dog Creek AMP, Stulc AMP, Whiskey Ridge, and Blind Canyon AMP grazing allotments (map M3.3). Their diet consists mostly of grasses and forbs and is supplemented by browse species such as sagebrush, saltbush species, greasewood, rabbitbrush, and winterfat. Montana Fish, Wildlife & Parks (MFW&P) management objectives are to provide a quality hunting experience and to stabilize the population size.

BLM management objectives are to provide quality habitat on BLM land and to maintain bighorn sheep as appropriate. Habitat quality or quantity has not been a concern with this bighorn sheep herd until recently. The minimal herd expansion that this herd has displayed recently indicates that some limiting factor has been reached. Efforts will be ongoing to continue

monitoring the sheep herd and ensure that quality habitat remains available for their use. Appropriate habitat and herd size management is crucial because of the propensity of bighorns to contract various diseases. Bighorn attraction to recently burned areas has been well documented on other ranges. Burned areas from wildfires on both sides of the Missouri River are receiving concentrated use from sheep, particularly in the winter and spring months.

The mule deer populations in the area are currently at good levels but were at a very low level in 1996 and have been continually improving over the past seven years. Several factors contributed to this most recent population fluctuation that mule deer experienced. The mule deer population drop in the mid 1990's was primarily caused by poor production of forbs and browse on consecutive years (1994 and 1995) as a result of low rain fall during the growing season. Cold temperatures and deep snow in 1996 and corresponding high predator numbers also affected the population drop. There are some areas in the watershed where the preferred browse species are either decedent or being over used by wildlife or livestock. Browse leader production for the upcoming winter was excellent during the growing season of 2003 due to abundant spring moisture. Habitat characteristics of broken topography, cover, and browse availability make the Arrow Creek drainage a very productive mule deer area. The entire Arrow Creek/Upper River/Whiskey Ridge landscape is considered valuable mule deer habitat.

Elk numbers have also increased since an introduction into the Missouri Breaks in the 1950s but the planning area is on the fringes of current elk occupation. MFW&P objectives include maintaining the population at current levels and preventing or reducing damage to crops. BLM's objectives are to provide habitat for the elk population in the breaks. The small portions of hunt districts 417 and 426 that are included in this planning area have very minimal elk numbers and provide only limited hunting opportunities. The recognized elk habitat occurs in the Blind Canyon, Mutton Coulee and Seventy Nine Coulee allotments. A small number of elk, primarily bulls, have been documented using the Stulc AMP and Whiskey Ridge allotments.

Whitetail deer and antelope are only minor inhabitants of the planning area. Antelope are fairly numerous in the Arrow Creek area but most use the cultivated fields above the BLM land. Whitetails are abundant in the riparian corridor along the Missouri River between Fort Benton and Coal Banks. The Evans Bend allotment is the only substantial piece of BLM land that provides habitat for whitetails in the planning area.

3.10.2 Birds

Of the 233 species of birds that inhabit the landscape, the bald eagle is on the threatened list, the mountain plover is proposed for the threatened list and the peregrine falcon has been delisted and is considered a special status species. Birds that occur on BLM's sensitive species list include Bairds sparrow, burrowing owl, ferruginous hawk, Swainson's hawk, and possibly sage grouse.

Tree nesting raptors such as Swainson's hawk, red-tailed hawks, and great-horned owl are known to be present in the cottonwood stands and isolated conifers along the river. There are also ground nesting raptors such as ferruginous hawks, burrowing owls and northern harriers present in the planning area. Burrowing owls and ferruginous hawks have been documented taking advantage of the prey opportunities provided at the prairie dog towns in the Arrow Creek drainage. The cliff faces provide perching and nesting habitat for many raptors and other birds. The more significant and abundant of the cliff nesters are the golden eagle, prairie falcon, and sparrow hawk. Canada geese also nest in some of the cliffs adjacent to water.

There are four species of upland game birds present in the planning area; Hungarian partridge, sharp-tailed grouse, ring-necked pheasant and Merriam's turkey. Sage grouse have been reported on or near the Wilson Coulee allotment but no birds or evidence of birds was noted during the 2002 or 2003 field seasons. Pheasant and partridge are commonly associated with cropland on the upper reaches of the corridor or along the rim. Pheasants are present on the islands and other areas of thick woody riparian vegetation all along the river. Sharp-tails are mostly located in heads of brushy coulees and in the grasslands. Sharp-tails numbers have dropped over the last few dry growing seasons but appear to be making a come back in 2003. Merriam's turkeys have become established in the ponderosa pine habitats on Whiskey Ridge Unit. The turkeys appear to be relying on the close proximity of the cropland to the forest cover on Whiskey Ridge.

Two of the more obvious bird species along the river are the white pelican and the great blue heron. The pelican is not known to nest on the river but there are many non-breeders, juveniles, and some adult breeders that fly in from adjacent lakes and reservoirs to fish on the river. The great-blue heron is common on the river in the summer months and there is at least one active rookery.

The cottonwood, box elder, and ash habitats along the river provide nesting and brooding habitat for dozens of neo-tropical migrant species during the summer. Mourning doves are very abundant in the tree stands along the river. The deciduous trees along the rivers edge are uncommon in this area of otherwise prairie and coniferous forested coulees making them very valuable for most bird species on the river.

Bald eagles have historically nested on the Missouri River. Currently there are at least three long time active territories along the river within one half mile of the planning area. The Little Sandy, Loma and Evans Bend territories all historically nest in cottonwood galleries along the river. There is suitable habitat to support additional bald eagle nests on the river. One limiting factor may be the distribution of stands of large cottonwoods along the river. Mature cottonwoods are used by the eagles for roosting, fishing, and nesting structure. Bald eagles like to forage on fish. The variety and number of fish in the river provide an abundant food source.

The home range of the mountain plover includes the short grass prairie from northern Montana to southern New Mexico. Breeding pairs have been documented on prairie dog towns 30 to 40 miles to the east of the planning area. No mountain plovers have been documented in the planning area to date but potential habitat does exist for the species. The area south of the Missouri River has not been adequately surveyed for plovers. The mountain plover may be considered a disturbed-prairie species that prefers arid flats with very short grass and high proportion of bare ground. In this planning area there is potential habitat for the species on the prairie dog towns in Arrow Creek and on a few acres of short grass dominated sites.

The peregrine falcon is one of the very few species to be de-listed from the T&E list. The Missouri River corridor has excellent potential to support breeding pairs of peregrine falcons. Several adult peregrines have been seen near this landscape area in the last few years but no breeding pairs have been observed. Reports of peregrines have also been received from the Dog Creek in the last few years. Approximately 24 young peregrines have been released since1993 at a hack site on the Missouri River four to five miles from the cliffs along Dog Creek. There are other potential cliff sites along the river and Arrow Creek to be suitable for a peregrine aerie. Peregrine falcons prey on passerine birds and ducks. Riparian enhancement along the Missouri River would promote an increase in duck production and provide an improved forage potential for peregrines.

Sage grouse have not officially been observed in the planning area. During the spring of 2001 an aerial survey was conducted of the planning area to identify locations of sage grouse strutting grounds (leks). One lek was identified in the Deadman Coulee area approximately two miles north of the Arrow Creek West allotment. Sage grouse have been reported on or near the Wilson Coulee allotment but no birds or evidence of birds was noted during the 2002 or 2003 field seasons. Most of the allotments in the planning area have no potential sage grouse habitat. The habitat in East Arrow Creek and Wilson Coulee allotments is marginal for sage grouse due to topography and limited sagebrush occurrence.

3.10.3 Fish

Forty-eight species of fish reside in Missouri River and its tributaries within the planning area. The pallid sturgeon is endangered and five other species are considered to be special status; blue sucker, paddlefish, sauger, sicklefin chub, and sturgeon chub. The most popular fish in the river from the stand point of the recreational fishermen are the sauger and paddlefish. Walleye, channel catfish, and shovelnose sturgeon are also highly desired by fishermen. Of the 48 different species of fish 32 are native to the river and 16 have been introduced to the system over the years. Fisheries habitat on the Missouri River within the landscape area has changed dramatically over the past 50 to 100 years with the advent of dams and subsequent flood control and the gradual reduction of cottonwoods and other deciduous trees. This can be evidenced by the high number of T&E and special status fish species in this relatively short section of river.

Pallid sturgeon were listed as federally endangered in 1990. This species has also been listed as a Montana Species of Special Concern (MSSC) since the list was first started in 1979. It is believed that construction and operation of Canyon Ferry, Tiber, and Fort Peck dams/reservoirs have altered habitat and fragmented pallid sturgeon populations to the point that they are now threatened with extinction. Pallid sturgeon recovery is in its initial stages and consists of protection of the gene pool by stocking hatchery-reared fish and re-creating the important spring pulse of the Marias River, an important tributary. Rough estimates indicate that there are approximately 50 adults in the section of the river from Fort Peck Reservoir to Marias River. Many of these fish still reach sexual maturity but no evidence of successful reproduction has been documented since monitoring of the pallid population first began in 1990. Three reaches have been identified as important habitat for pallid sturgeon in the Missouri River above Fort Peck. Two of these reaches are within this planning area; 1) the Coal Banks reach (one mile above Boggs Island to Alkali Coulee), and 2) Marias Confluence reach (Loma Bridge to Archers Island).

The sauger is a game fish that was recently added to the MSSC list in June, 2000 because of the recent widespread declines in populations throughout Montana. This designation recognizes that sauger are more vulnerable to relatively minor disturbances to its habitat and deserves careful monitoring of its status. A severe decline in sauger numbers was first noticed beginning in 1989. Populations have remained very low, especially in the reach between Great Falls and the Judith River confluence. Sauger fingerlings depend on normal summer flows for maintaining adequate nursery habitat in side channels and backwater areas. A combination of drought years, flow control from the upstream dams, and lack of woody cover in the river have made for poor conditions for young sauger survival.

Two tributaries of the Missouri River were found to be occupied by minnows during the field seasons of 2002. Minnows from Dog Creek were collected in the spring and sent in for positive identification. No sensitive species were identified in that sample. Arrow Creek is scheduled to

be sampled during the field season of 2003 as part of a regional prairie stream inventory being conducted by Montana, Fish, Wildlife and Parks. The results of that inventory are not yet available. Shonkin Creek likely has minnows that reside in the lower reaches of the creek. They have not been sampled at this time.

3.10.4 Amphibians and Reptiles

The tiger salamander is the only salamander occurring in the planning area. The woodhouse toad, western chorus frog, and possibly the northern leopard frog all occur in the area. There is concern for the populations of northern leopard frog which appear to be in a sharp decline. Spiny softshell and snapping turtles occur in the planning area. There is a recent interest in the spiny softshell turtles on the Upper Missouri River because this population is a disjunct population separate from other softshells on the Yellowstone and Lower Missouri Rivers. There is concern that concentration of livestock in softshell turtle nesting areas may impact nesting success. Snakes found in the area include the western rattlesnake, racer, bull snake, and two species of garter snake. The short-horned lizard is also known to be present in the planning area.

3.11 Wildland Fire

The wildland fire history in the planning area, from 1980 to 2003, indicates Federal agencies have responded to 14 fires which burned an estimated 110 acres. The average number of fires per year was 1.5, and the average fire size was 8 acres.

Fire Size Class	# Fires	Min Acres	Max Acres	Ave Acres	Total Acres
A =.1 to .25 acres	1	0.10	0.10	0.10	0.10
B = .26 to 9.9 acres	10	0.50	7.00	2.45	24.50
C = 10 to 99.9 acres	3	15.00	50.00	28.33	85.00
	14				**109.60**

3.12 Cultural Resources

Cultural resources are broadly defined by BLM as any cultural property or traditional lifeway value. Cultural properties are definite locations of past human activity, occupation or use. Traditional lifeway values are the traditional systems of religious belief, cultural practice or social interaction that are not closely identified with definite locations (JVP, 1992).

The prehistoric period began around 14,000 years ago and ended around 1855 with the signing of the Blackfeet-Stevens Treaty. The inhabitants of this area were mostly hunters and gatherers utilizing the natural resources (plants and animals) for subsistence activities (JVP, 1992).

Later in the historic period, homesteading brought settlers into the planning area by the thousands. The region was quickly settled by Germans and Scandinavians from the Midwest, as well as by eastern European immigrants like Bohemians and Yugoslavs (JVP, 1992).

Some cultural sites are significant because of the information they can reveal about the past through systematic study while others convey a sense of history for the time period that they represent.

Another type of cultural property which may, or may not be eligible to the National Register of Historic Places involves places which are important because of current use or values associated with the location.

Preserving the values of these cultural properties is an important consideration for management actions in this area. In some cases, preservation of the setting is necessary to preserve the integrity of the cultural property. This consideration is important where management actions have the potential to affect the setting of a cultural property when the setting contributes to its overall integrity.

The cultural resource site database maintained by the Montana State Historic Preservation Office was reviewed on June 18, 2003. A printout from that database was compared to the BLM Arrow Creek Watershed study area, which shows land status. There are only two (2) historic period sites and four (4) prehistoric period sites recorded on BLM surface within the study area, even though there are hundreds of sites within the townships involved. This disparity probably relates both to the lack of cultural inventories as well as the higher resource value of the non-federal lands.

The historic period sites relate to homesteading and early agriculture and consist of a collapsed dugout (24FR398) and an old water trough (24FR71).

The prehistoric sites include two tipi ring sites (24CH212 and 24CH281), a rock alignment (24CH81) and a small scatter of detritus from the manufacture of stone tools (24FR280).

There are no known sites on BLM surface within the study area that have been determined eligible for the National Register of Historic Places.

3.13 Surface Water

The area covered by this plan is called the Arrow Creek landscape. This area is not a true watershed but rather a collection of grazing allotments that all drain to the Missouri River. The Missouri River is the major river in the planning area. Intermittent tributaries are Arrow Creek, Shonkin Creek, Coffee Creek, and Dog Creek. All other water courses in the watershed are ephemeral, flowing only in response to snow melt or intense summer storms. None of the streams in the watershed are potable without treatment but all are suitable for livestock and wildlife.

The Montana Department of Environmental Quality (MT DEQ, 1998) lists the Missouri River as a water quality impaired stream. The Missouri River is only partially supporting aquatic life, warm water fish and swimming. Probable causes are elevated metals, habitat alterations, and riparian degradation. Probable sources of impairment are agricultural and grazing practices and unknown sources. Dog Creek is on the draft 2004 303(d) list meaning it will soon be added to the list of impaired streams. Probable causes are salinity and total dissolved solids. Probable sources are agricultural practices and natural sources. Arrow and Coffee creeks are currently not on the impaired list but are scheduled for re-assessment in the near future. The results of this re-assessment may or may not place them on the impaired list.

BLM has developed 16 sources for livestock waters (springs, watersavers, and reservoirs) on public lands in the planning area.

3.14 Ground Water

Shallow ground water, less than 500 feet below the surface, is scarce in the planning area due to large-scale gravity slides away from the Bearspaw Mountains and by the extensive thrust faults and rifting, tilting, and collapse of the rocks that occurred in the slide sheet. Where shallow ground water does occur, it is generally potable without treatment although it may be high in iron or sodium, which may cause a bad taste. Yields are normally less than 10 gpm. Developing and transporting water from shallow wells is generally not an economically feasible option to solve the shortage of reliable water sources on public lands for livestock/wildlife in the planning area.

Deeper ground water, greater than 500 feet below the surface, is present in the watershed west of the Judith River. The quality is often too poor for domestic or livestock use. The depth to the water precludes it from being an economically feasible source of livestock/wildlife water. No wells currently exist on public lands in the planning area.

3.15 Riparian

Riparian areas are defined as the green zones associated with lakes, reservoirs, estuaries, potholes, springs, bogs, wet meadows, and streams (ephemeral, intermittent, or perennial). Greasewood and silver sagebrush are common in alluvial flats in or near riparian areas. Snowberry, chokecherry, hawthorne, rose, buffaloberry, and gooseberry are commonly found in woody draws. The riparian zone occurs between the upland zone and the aquatic zone. Riparian areas are characterized by water tables at or near the soil surface, and by vegetation requiring high water tables. A universally accepted definition satisfactory to all users has not yet been developed because the definition depends on the objectives and the field of interest. However, scientists generally agree that riparian areas are characterized by one or more of the following features: 1) *wetland hydrology*, the driving force creating all riparian areas, 2) *hydric soils*, an indicator of the absence of oxygen, and 3) *hydrophytic vegetation*, an indicator reflecting riparian site conditions.

Generally, riparian areas are among the most resilient ecosystems. Depending on condition and potential, they usually respond more quickly than drier upland ranges to changes in management (USDI, 1997).

Livestock grazing management in riparian areas is one of the most pervasive issues facing rangeland managers. In this watershed a typical pasture has as its water source one of the major streams listed in the Surface Water section above. The riparian area associated with these streams occupies less than 10% of the total area in the pasture but because of a lack of other water sources, provides a disproportionate amount of the forage consumed (Marlow 1985).

Riparian area management is also one of the most complex issues for rangeland managers because:

- Most riparian acreage is privately controlled or intermingled with other ownerships Riparian areas are often the primary, and sometimes the only, watering place for livestock
- Public use of riparian areas is increasing
- Other resource values are concentrated in and dependent on those areas

- Grazing affects a number of resources and uses, both on-site and off-site
- The value of properly functioning riparian systems is not widely understood
- Traditional management practices are often inadequate and difficult to change

Because of these complexities, the involvement and cooperation of private landowners, ranchers, recreationists, other watershed users, and many different disciplines is critical to the success of riparian area management programs.

Most of the riparian areas in the planning area were assessed for health. The health score was then used to determine if changes were needed in the existing grazing systems.
Riparian health ratings consist of three categories; proper functioning (PFC), functioning at risk (FAR), and non-functioning (NF). PFC is described as functioning properly when:

- Adequate vegetation, landform, or woody debris is present to dissipate stream energy
- Vegetation captures sediment thereby improving water quality
- Vegetation captures sediment aiding in floodplain development
- Improves flood-water retention and ground water recharge
- Develops root masses that stabilize streambanks against cutting actions
- Develops diverse ponding and channel characteristics to provide fish habitat, waterfowl breeding, and other uses
- Supports greater biodiversity

FAR are areas that are functional but an existing soil, water, or vegetation attribute makes them susceptible to degradation. NF are riparian areas that clearly are not providing vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, etc., as listed above. The absence of certain physical attributes such as a floodplain where one should be are indicators of non-functioning conditions.

The health of streams tributary to the Missouri river were assessed using the Montana Riparian and Wetland Association (MRWA) Lotic Health Assessment (stand alone, Apr 28, 1998). A total of 23.9 miles were assessed, 2.4 miles scored PFC, 17.6 miles scored FAR but all were in an upward trend, and 3.2 miles were less than PFC due to excessive livestock use. Riparian areas on the Missouri River were assessed using the MRWA Large River Health Form (July 27, 2000). This form is composed of two components, vegetation and soils/hydrology. The total score is discounted in the soils/hydrology component due to flow regulation by the upstream dams, making it very difficult to achieve PFC. In this document only the vegetative score was used in determining the health of the riparian sites on the Missouri River. A total of 4.7 miles were assessed, all scored less than PFC due to weeds and flow alteration by upstream dams. Livestock was not a factor for any of the 4.7 miles not meeting standards.

The riparian areas bordering the Missouri River exhibit a severe lack of cottonwood and other woody plant regeneration. Various factors affect the regeneration of riparian vegetation along the Missouri River. Flow regulation by dams, livestock, wildlife, scour by ice and high water, beaver, drought, disease, insects, and extensive use by campers all can negatively impact or even prevent regeneration (Scott and others 1997, Auble and Scott 1998).
Numerous studies on the Missouri and other large rivers in the northern great plains, have indicated that the two major causes for lack of riparian regeneration, especially woody species, are flow regulation and continuous hot season livestock grazing (Hansen 1989, Platts 1979, Platts 1981, Platts and others 1987, Kauffman and Krueger 1984, Windell and others 1986,

Davis 1982, Knoph and Cannon 1982, Marcuson 1977). BLM has been monitoring its riparian areas on the Missouri River yearly since 1990. In addition, BLM and the United States Geological Survey (USGS) have been jointly conducting a cottonwood regeneration study on the Missouri River since 1996. It is evident from these studies that a lack of spring floods and continuous hot season livestock grazing (July through September) are detrimental to cottonwood regeneration and riparian areas in general (Scott pers. comm.). The lower peak flows in spring and summer are reducing the extent of seedbed preparation for riparian establishment. Riparian vegetation establishes where the channel is actively moving. This channel movement is generally caused by floods. Higher base flows in the winter may be subjecting those areas that do establish to increased ice scour (Scott pers. comm.).

BLM maintains riparian exclosures at twelve sites outside the boundaries of this planning area. They receive no livestock grazing. They are all in or approaching PFC although they were all in FAR or NF prior to exclosure.

Regeneration is still occurring on the Missouri in the Wild and Scenic stretch despite the effects of dams, beaver, ice, low flows, drought, etc. Hansen (1989) inventoried 288 separate sapling and pole stage cottonwood sites. BLM visited all these sites in 1998 and documented that 286 of the sites did not experience hot season grazing during the period they progressed from seedlings to the sapling or pole stage. BLM also visited all the sites of mature cottonwoods. Normal succession of cottonwood sites should have an understory of green ash, box elder, chokecherry, gooseberry, and red oiser dogwood under the mature cottonwood trees. Only one of these sites shows the proper succession. The remaining sites all show intensive livestock use, prohibiting normal succession.

This data indicates grazing is having a major impact on the regeneration of woody vegetation along the Missouri River. Winter, spring or late fall grazing appears to be more compatible with the regeneration of riparian vegetation.

Stubble height of key riparian graminoid species (western wheatgrass, prairie cord grass, rushes and sedges) and utilization on woody species (cottonwoods and willows) is a good measure to indicate if a riparian area is progressing toward or remaining in PFC. Several studies have indicated a need for a 4 inch stubble height on the key riparian graminoid species at the end of the grazing season or growing season, whichever occurs last (Montana Watershed Coordination Council 1999, Mosley, Cook, Griffis, and O'Laughlin 1997, Ehrhart and Hansen 1998, Clary and others 1996, Clary and Leininger, 2000).

3.16 Wilderness

There are no wilderness or wilderness study areas located in the planning area.

3.17 Wild and Scenic Rivers

The Upper Missouri National Wild and Scenic River is located between Fort Benton and U.S. Highway 191 in North Central Montana. This 149 mile stretch of river flows generally west to east through Chouteau, Blaine, Fergus and Phillips Counties. It was designated a component of the National wild and Scenic Rivers system in 1976.

The planning area runs from river mile 52 to approximately river mile 110 on public lands. There are 47.5 miles of "wild", 19 miles of "recreational" and approximately 5 miles of "scenic" river for a total of 71.5 miles adjacent to the planning area.

Since the Upper Missouri Wild & Scenic River designation is "bank to bank" from Fort Benton to Coal Banks the Upper River Landscape unit is adjacent but not within the Wild & Scenic River in this area. Since activities with the landscape unit may impact the Wild & Scenic River, the impacts of alternatives were analyzed with consideration of the impacts to the Wild and Scenic values in the Upper River land unit. A small portion of the Whiskey Ridge landscape unit is located within the Wild and Scenic River system (northern portion of the Blind Canyon and Stulc Allotments).

Section 3(b) of the Wild and Scenic Rivers Act of 1968 directs that the boundaries of Wild and Scenic Rivers (in wild sections only) would not exceed 1/4-mile on each side of the river. Public law 94-486, which added the upper Missouri to the national system, amended this act and required the BLM, where necessary to provide a rim to rim corridor, and to determine which of the three national wild and scenic river classifications best fit portions of the river.

The Upper Missouri River was designated with a multiple use mandate, which means the BLM has to be specific in its treatment of all the resources present (Upper Missouri National Wild and Scenic River Management Plan Update, Appendix A, 1993).

3.18 Economics

The planning area is situated within Fergus and Chouteau Counties in central Montana. Agriculture is a major industry in both counties. Recreation/tourism and services are also major contributors to the overall economy in the region. The total land area in farms and ranches in 1997 (the latest year for which data are available) was estimated to be 4,460,340 acres, and the total number of farms and ranches was estimated to be 1563 (USDA, 1997).

The planning area, represents less than 2 percent of the total land in farms and ranches in the two-county area. The public land portion of the planning area (31,500 acres) represents about one percent of the total land area in the two-county area.

The 32 permittees in the planning area represent approximately 2% of the total number of farms and ranches in Choteau and Fergus Counties. All of the permittees have cow-calf operations and many of the permittees also have farming operations. The 32 permittees hold a total of 5,185 BLM AUMs and are permitted to graze 1,467 cow-calf pairs for at least some portion of the year on BLM-administered land. The 5,185 AUMs contribute an estimated $145,725 and six jobs to the area's economy, after accounting for direct and indirect spending effects. Of the 32 permittees in the planning area, 18 have moderate to high levels of dependence on public land forage for their operations and 14 have low dependence on public land forage for their operations.

3.19 Sociology

Chouteau and Fergus counties are sparsely settled counties located in central Montana adjacent to the Missouri River. The 2000 population of Chouteau county was 5970, which was an increase of nearly 10% over 1990 (MT. Dept. of Commerce, 2001). The population density was 1.5 persons per square mile. The 2000 population of Fergus county was 11,893, which was a decrease of nearly 2 percent since 1990. The population density was 2.7 persons per square mile. Fort Benton and Lewistown are the county seats and main population centers in Chouteau and Fergus counties respectively. Fort Benton had a 2000 population of 1694 and Lewistown had a 2000 population of 5813. Both communities lost 4 to 5 percent of their population during the 1990s.

Local residents and other public land users exhibit attitudes and values typical of a rural farm/ranch oriented society in the western United States. Residents value the rural character of the area, wide-open spaces, naturalness and solitude. Positive aspects of the area include the independence and industriousness of the local people, lack of urban problems, relaxed pace and personal freedom. Residents have a strong sense of heritage. These people have grown with the area, have seen changes occur and are extremely concerned about any management decisions that would potentially disrupt their lifestyles.

There are 32 farm/ranch operations in the study area with BLM grazing permits. These are predominately family operations with a long history in the area. Many of these ranches have grazing leases on state lands that are intermingled with private and public land. Changes currently affecting these ranches include increasing recreation in the area, designation of the Upper Missouri River as a national monument, implementation of standards and guidelines by BLM.

Chapter 4.0 Environmental Consequences

Section Contents

This chapter discusses the environmental consequences of implementing the alternatives described in Chapter 2. The impacts are discussed for each environmental element by alternative.

The following critical elements of the human environment were considered. They would not be affected by the proposed action or any of the alternatives and will not be discussed further.

- Areas of Critical Environmental Concern
- Environmental Justice
- Farmlands (Prime or Unique)
- Native American Religious Concerns
- Wastes (Hazardous/Solid)
- National Energy Policy (Executive Order 13212)
- Wilderness (none present in the planning area)

4.1 ALTERNATIVE 1 IMPACTS CONTINUATION OF CURRENT MANAGEMENT ALTERNATIVE

This section discusses the impacts to the various environmental elements of renewing the grazing permits with the current terms and conditions.

4.1.1 Air Quality

Continuation of current management would not change current affects to Air Quality.

4.1.2 Coniferous Forest

Maintaining current management of livestock grazing would not impact coniferous forests. This alternative would not initiate prescribed fire or mechanical treatments. Forest densities would increase in some portions of the Whiskey Ridge Unit, causing competition among conifers and mortality from drought and insects. Increased density of small trees would increase the number of acres of forest with a dense undergrowth of fuel reaching into the lower forest canopy.

Pine encroachment into rangeland areas would continue to expand in portions of the Whiskey Ridge Unit. In densely forested areas, productivity of understory species such as shrubs, forbs, and grasses may decline causing reduced forage for wildlife and livestock and changes in the water cycle. Wildland fire in dense forests could be severe, but may not expand to large size due to the broken topography and the patchy nature of the coniferous forests. Map M 3.5 shows forested areas of the Whiskey Ridge Unit.

4.1.3 Rangelands

If current grazing management continues, upland sites that are meeting standards would slowly improve or remain stable. All available information indicates a static or slight upward trend on upland sites meeting standards.

Upland sites not meeting standards as a result of livestock grazing would continue to decline in productivity and upland range health (Appendix D). Without periodic rest from grazing during the growing season, perennial grasses in these degraded areas would continue to have low vigor and low density with limited reproduction of desirable grasses occurring. Annual grasses, shallow rooted perennial grasses, forbs, cactus, and fringed sagewort would continue to be abundant.

Under current management, allotments not meeting the upland standard such as Grace Bench, Reservation Bench, and Baker Bar would continue to receive prolonged livestock grazing throughout the grazing season. Plants on these allotments are not vigorous and lack sufficient root reserves and roots mass to adequately cope with drought. These allotments are at high risk of continued deterioration and may eventually drop into an early seral category, with lower plant diversity, severe loss of topsoil and productivity.

Rangelands not meeting standards due to the presence of nonnative plants such as Reservation Bench and Evans Bend would not meet standards for rangeland health in the future.

4.1.4 Soils

This alternative would generate the highest level of soil loss from wind and water erosion. In some cases accelerated erosion is occurring on allotments not meeting the upland standard. If no management changes are made, soils in these allotments will continue to lack sufficient ground cover and root density to resist erosion and will continue to erode at levels higher than expected for the site. Infiltration of precipitation into soils of these sites will be reduced by soil compaction, lack of plant and ground cover to intercept overland flow and lack of organic matter near the soil surface. Loss of top soil from wind erosion would continue to increase on Grace Bench allotment. Accelerated erosion would not occur on allotments that are meeting the upland standard as plant cover and type on these allotments would remain adequate to resist erosion.

4.1.5 Weeds

Under current management, noxious weeds within the planning area would continue to spread. The BLM, LFO would administer the present weed control program which has not kept pace with weed infestation growth. A detailed noxious weed inventory completed during 1999 and 2000 revealed 500 acres of noxious weeds on BLM land within the planning area along the Missouri River.

Weed control has lagged behind infestation growth collectively due to the inherent nature of weed propagation in river systems, an unsystematic control effort, a lack of public awareness and education, herbicide label restrictions, herbicide effectiveness, and tedious bioagent development, adaptation, and dissemination. Continued current management would concentrate weed control efforts in established campgrounds and developed recreation sites

along the river, and on uplands through cooperative weed control agreements with livestock permittees.

4.1.6 Recreation

Increased infestations and spread of noxious weeds would adversely affect recreation in campgrounds and hiking areas. There would be no other impacts to recreation under this alternative.

4.1.7 VRM

There would be no impacts (direct or cumulative) to the visual resource under this alternative.

4.1.8 OHV

There would be no direct or cumulative impacts to Off-Highway Vehicle use from this alternative. Off-highway vehicle use would be deferred to the Monument (RMP/EIS) planning effort.

4.1.9 Wildlife Resources

Under current management, the riparian health, upland health and noxious weed infestation issues that have been identified would not improve. Upland sites not meeting standards as a result of livestock grazing in Baker Bar, Grace Bench and Reservation Bench allotments would continue to decline in productivity and upland range health. Browse availability for mule deer and bighorn sheep would continue to decline. Forage and cover for birds and other small mammals would also deteriorate. Over time, the reduction in wildlife forage and increased levels of noxious weeds would cause a cumulative loss in the value of these isolated unhealthy areas as wildlife habitat.

Improvement of non-functioning riparian areas in Baker Bar, Bird Coulee, and Slide Coulee would not occur and the trends would remain static or continue to degrade. Unhealthy riparian areas would create a negative impact to most wildlife species. Vegetative diversity and structure that are associated with healthy riparian areas would not be available for cover, foraging and nesting areas for many species. The functioning riparian systems that were documented along the Missouri River should continue to regenerate cottonwood, green ash and box elder stands and provide quality habitat for a wide variety of wildlife species.

Healthy cottonwood stands with diverse herbaceous understory would continue to be a major benefit to the neotropical birds and the threatened and endangered bald eagle and pallid sturgeon. Noxious weeds would continue to spread because the present weed control program has not kept pace with infestation growth. The diversity of native plant species, particularly along the river and the smaller riparian systems, would eventually decline to the point that the habitat would be of minimal value for cover and forage to wildlife.

4.1.10 Wildland Fire Management

Regardless of the alternative chosen, wildland fire suppression will be in accordance with the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment For Montana and the Dakotas (July 2003); the State Director's Interim Guidance for managing the Upper Missouri River Breaks National Monument (June 2001); and the Central Montana Fire Zone Fire

Management Plan for Lewistown and Malta Field Offices (draft Feb 2001).

This planning area is in the Breaks, fire polygon C1. The C designation identifies areas where fire is a desired ecosystem management tool. Fire could be a positive influence in much of this area and restoration of natural fire regimes will be encouraged where practical. However, each fire occurrence will have special consideration. Obvious concerns focus around structural developments, croplands, livestock and livestock forage needs. Social and political considerations will dictate how each fire occurrence will be managed. Appropriate fire suppression based on current fire danger, resource availability and predicted weather will be use to ensure safety of fire suppression personnel, reduce cost of fire suppression and provide an opportunity to return fire to its natural place in the ecology of the area.

4.1.11 Cultural Resources

Under current management, cultural sites would remain static to slightly deteriorating. Direct impacts to specific sites from BLM approved actions would be reduced or eliminated where possible. Visual impacts from BLM actions would be mitigated or eliminated where setting contributes to significance. Less specific impacts such as the gradual loss or deterioration through erosion or weathering would continue. Loss and damage would also continue to occur as a result of unauthorized and unlawful collection and/or vandalism.

Significant cultural sites would be identified for stabilization or mitigation of deterioration as time and funding allow.

4.1.12 Surface Water

This alternative would not address the current surface water impairment or comply with the total maximum daily load (TMDL) process since no improvements would be made to upland or riparian vegetation. Those public lands in the planning area that are in less than proper functioning condition (both uplands and riparian areas) would continue to contribute sediment and nutrients to the two water quality impaired streams (see 3.13).

4.1.13 Ground Water

This alternative would cause no direct or cumulative impacts to ground water quality or quantity.

4.1.14 Riparian

Livestock grazing is a major factor in three allotments (Baker Bar, Bird Coulee, and Slide Coulee) which are not meeting the riparian standard (less than PFC) as determined by BLM inventories (Appendix E). These areas would remain static or continue in a downward trend since no changes in livestock grazing would occur.

4.1.15 Wild and Scenic Rivers

There would be no direct or cumulative impacts to the Upper Missouri Wild and Scenic River from this alternative.

4.1.16 Economics

Continuation of current management would cause adverse economic impacts to Grace Bench,

Coffee creek, Arrow Creek East and Arrow Creek West permittees/leasees due to lack of needed improvements. Economic impacts to the Evans Bend leasee would also be adverse due to increased spread of noxious weeds. Given current trends, these weeds would continue to displace native plant species and livestock forage at a rapid rate. There would be no impacts to other permit/lease holders as management would stay the same.

Other enterprises across the planning area, such those dependent on recreation, would not be directly affected under this alternative in the short term. However, deterioration of natural resources may lessen the quality of recreational experiences in the long term. One such example would be the spread of noxious weeds limiting the number and quality of camping sites on the Missouri River.

Summary of economic impacts:

Continuation of Current Mgmt. (Alternative 1)			
Economic Impact	Beneficial	Neutral	Adverse
# of Ranches	0	28	4

4.1.17 Sociology

Under current management there would be no effects to permittees or the local community in the planning area.

4.2 ALTERNATIVE 2 IMPACTS - PROPOSED ACTION ALTERNATIVE

4.2.1 Air Quality

Implementation of Alternative 2 would initiate a prescribed fire program of work. Prescribed burning and slash pile burning have the potential to exceed air quality standards such as particulate matter for short periods of time. However the overall effects on air quality during these treatments would be less severe that the smoke impacts resulting from large wildland fires.

Prescribed burning would not occur in a location or under conditions that would deteriorate air quality related values in Class I areas, or in designated non-attainment areas. Prescribed fires require the approval from the Montana Department of Health and Environmental Science, Air Quality Bureau. Prescribed fire would conform to the provisions of state regulations and implementation plans as specified in 9210-Fire Planning section of the BLM manual.

4.2.2 Coniferous Forest

This alternative would not cause any negative impacts (direct or cumulative) to coniferous forests.

Implementation of Alternative 2 would initiate a prescribed fire program of work that would include burning for increased wildlife forage, range improvement, and forest health. Prescribed

burning in Blind Canyon AMP, Stulc AMP, and Whiskey Ridge would reduce conifer densities in forested areas and pine encroachment into rangeland areas in portions of the Whiskey Ridge Unit.

Prescribed burning would be implemented under specific conditions that create surface fires with occasional crown runs in the tree canopy. In some areas, the majority of understory vegetation would be burned, with partial removal of the tree canopy. In other areas only understory vegetation would be burned with no removal of the tree canopy. Certain stands of large ponderosa pine will be maintained for turkey roost trees. In some places vegetation would remain unburned.

The initial disturbance that is caused by prescribed burning would be offset by the long-term benefits. Reductions in forest canopy densities would promote deciduous shrubs and herbaceous plants to resprout and increase in coverage. Diversity of forbs, shrubs, and grasses may also increase. Forest health would improve as competition among conifers is reduced. Fuel loadings would be reduced, with lower risk of high severity wildland fires. Although initial soil erosion rates may increase immediately after burning, herbaceous vegetative cover would increase within a few years and soil erosion would be reduced below or to pre-burn levels. Rest from livestock grazing would enhance this recovery. Reduced forest canopy densities and increased herbaceous coverage may improve water infiltration into the soil. Associated riparian communities may benefit from the possible increase in shallow water tables.

Mechanical treatments in the Dog Creek allotment would reduce pine encroachment into rangeland areas and restore shrub/grassland communities. Treatments would be accomplished by hand thinning, piling, and burning piles. Impacts from these treatments would be positive for upland health.

Potential prescribed fire or mechanical treatment areas are identified on map M-3.6. The areas shown on the map represent general areas where treatments may be done; specific units would be identified within those areas.

4.2.3 Rangelands

The proposed action would improve conditions on allotments not meeting standards through various types of rotational grazing systems or limited season of use. Water developments, salting, and changes in season of use would better distribute livestock use and improve overall rangeland conditions. If monitoring indicates significant progress toward meeting standards is not occurring, management adjustments/corrective actions would be initiated as described in the adaptive management section (section 2.4.1 & Appendix F). Rangeland Health ratings are listed by allotment in appendix D.

The following discussion of soil stability is described in context of the high natural rates of geologic erosion of soils in the western sedimentary plains and in portions of the western glaciated plains MLRA. Even in the absence of disturbance of any form, certain soils derived from shales and sandstones will continue to erode at high levels. When soil stability is mentioned, it is expected that erosion levels will be within the natural, geologic rates for the various soil types in the allotment.

Overall there would be no negative impacts (direct or cumulative) to soils or rangeland from this alternative.

4.2.2.1

Rangeland conditions on the allotments listed in this table would continue to meet standards for rangeland health. Trends on these allotments are static or improving and this alternative would make no major changes to management on these allotments.

ABN	Morrow Place
Arrow Creek Bench	Ritland
Big View	Rowe Coulee
B Lazy M	Seventy Nine Coulee
Carter Ferry	Slide Coulee (East & West)
Cherry Creek	Spring Coulee
Churchhill Butte	The Canyon
Dostal/Engellent	Vidal
Evers Bench	Upper Seventy Nine Coulee
Highwood Creek	Widow Coulee
	Woodcock Coulee

The following allotments have management changes and the impacts are described below:

4.2.3.5 Arrow Creek East and West

Alternating the season of use with Mutton Coulee would improve range conditions. Vegetation would benefit from periodic rest from grazing that is provided by this alternative.

Conditions would remain adequate for long-term stability and health of soils.

4.2.3.5 Baker Bar

Rangeland conditions would improve. Rest during part of the growing season would improve upland condition on the east 40 acre parcel. Conditions on the west parcel would remain static or improve. The west parcel is meeting standards for rangeland health and no changes have been made to management of livestock.

Soils in this area are naturally unstable due to shale outcrops. Under the proposed action, soil erosion rates would not be affected. There would no direct or cumulative impacts to soils from this action.

4.2.3.8 Bird Coulee

Rangeland conditions would remain static or improve. The change in season of use combined with an additional upland water source and planned grazing rotations would increase plant vigor and cover and improve upland conditions.

Certain soils in this area are inherently unstable due the abundance of marine shale. This action would improve soil conditions and there would be no adverse impacts to soils (direct or cumulative).

4.2.3.9 Blind Canyon

Rangeland conditions would remain static or improve. This allotment is meeting the upland standard and no changes have been made to management of livestock.

Prescribed fire treatments would benefit uplands by increasing production of herbaceous species and improving forest health. The production of desirable browse species would be increased by burning decadent shrubs. Treatments would increase the amount of sunlight reaching low growing plants, temporarily increase the availability of minerals, and reduce litter layers that inhibit herbaceous growth. Prescribed fire may improve livestock distribution in some areas.

Direct and cumulative impacts to soils would be positive. Although prescribed fire would cause some temporary disturbance to the soil surface, this disturbance would be offset by the long-term benefits. Initial erosion rates may increase immediately after burning, but herbaceous vegetative cover would increase within a few years and soil erosion would be reduced below or to pre-burn levels. Rest from livestock grazing would enhance this recovery. Treatment areas would be burned in a mosaic pattern leaving patches of burned and unburned vegetation. Because prescribed fire would be implemented under specific fuel and weather conditions that produce low to moderate fire intensity, impacts to soils from superheating of the surface layer would be minimized.

4.2.3.13 Coffee Creek Allotment

Rangeland conditions would remain static or improve. These sites are meeting standards and no changes have been made to management of livestock. The construction of a northern allotment boundary fence would improve rangeland conditions by limiting additional grazing use from an adjacent allotment.

Conditions would remain adequate for long-term stability and health of soils.

4.2.3.14 Dog Creek AMP Allotment (Gibbon Lease)

Rangeland conditions would remain static or improve. This allotment is meeting the upland standard and the change to a later turnout of livestock would benefit vegetation. Higher cattle numbers and shorter grazing season would benefit vegetation by allowing longer rest periods.

Mechanical treatments that remove pine encroachment would restore shrub/grassland communities and maintain diversity of herbaceous species.

Conditions would remain adequate for long-term stability and health of soils.

4.2.3.17 Evans Bend Allotment

Rangeland conditions would remain static or improve. Spring and summer rest from grazing would benefit resource conditions on the pastures that border the river.

Direct and cumulative impacts to soil resources would be positive. Plant cover and vigor would increase on pastures bordering the river (A1,A, C, D). Conditions on Pastures E and F would remain the same. Noxious weed control may reduce erosion slightly by allowing perennial grasses an opportunity to increase. Soils conditions would improve slightly under this action.

4.2.3.18 Grace Bench Allotment

Range conditions would improve. This allotment is not meeting standards. Reseeding followed by rest would improve plant composition and cover.

Impacts (direct and cumulative) to soils would be positive. Increased plant cover would reduce wind and water erosion. If favorable climatic conditions prevail, soil stability would be achieved within two to five years. If the initial seeding fails, subsequent reseeding efforts would insure successful vegetation establishment. Rest from grazing would allow soils to build up organic matter and vegetative cover.

4.2.3.20 Melton Coulee Allotment

Rangeland conditions would remain static or improve. This allotment is meeting standards. The proposed fence between Melton Coulee and Coffee Creek would improve management of livestock. No other change have been made to management of livestock.

Conditions would remain adequate for long-term stability and health of soils.

4.2.3.22 Mutton Coulee Allotment

Rangeland conditions would remain static or improve. Alternating the time of grazing would benefit upland vegetation.

Conditions would remain adequate for long-term stability and health of soils.

4.2.3.23 Reservation Bench Allotment

Rangeland conditions would remain static or improve. Conditions of non-native grassland would remain static unless the crested wheatgrass areas are converted back to native range. The portion of the allotment that is composed of native vegetation would improve with periodic rest during early summer. Conversion of non-native grasses to native plants (type conversion) would cause disturbance to rangeland in the short term. Noxious weeds may increase in the short term, however long-term impacts would be positive from an increase in the overall diversity of plant species.

Initial soil disturbance would be high if type conversion of non-native grassland occurs. Over time conditions would improve and long-term stability and health of soils would be achieved. If vegetation conversion efforts are undertaken, monitoring would be conducted to insure vegetation establishment is successful. If the initial seeding fails, subsequent seedings would occur until perennial vegetation is established. Conditions would remain adequate for long-term stability and health of soils if no type conversion occurs.

4.2.3.30 Stulc Allotment

Rangeland conditions would remain static or improve. These sites are meeting standards and no changes have been made to management of livestock.

Prescribed fire treatments would benefit uplands by increasing production of herbaceous species and improving forest health. The production of desirable browse species would be increased by burning decadent shrubs. Treatments would increase the amount of sunlight

reaching low growing plants, temporarily increase the availability of minerals, and reduce litter layers that inhibit herbaceous growth. Prescribed fire may improve livestock distribution in some areas.

Direct and cumulative impacts to soils would be positive. Although prescribed fire would cause some temporary disturbance to the soil surface, this disturbance would be offset by the long-term benefits. Initial erosion rates may increase immediately after burning, but herbaceous vegetative cover would increase within a few years and soil erosion would be reduced below or to pre-burn levels. Rest from livestock grazing would enhance this recovery. Treatment areas would be burned in a mosaic pattern leaving patches of burned and unburned vegetation. Because prescribed fire would be implemented under specific fuel and weather conditions that produce low to moderate fire intensity, impacts to soils from superheating of the surface layer would be minimized.

4.2.3.33 Whiskey Ridge Allotment

Rangeland conditions would remain static or improve. These sites are meeting standards and no changes have been made to management of livestock.

Prescribed fire treatments would benefit uplands by restoring shrub/grassland communities, increasing production of herbaceous species, and improving forest health. The production of desirable browse species would be increased by burning decadent shrubs. Treatments would increase the amount of sunlight reaching low growing plants, temporarily increase the availability of minerals, and reduce litter layers that inhibit herbaceous growth. Prescribed fire may improve livestock distribution in some areas.

Direct and cumulative impacts to soils would be positive. Although prescribed fire would cause some temporary disturbance to the soil surface, this disturbance would be offset by the long-term benefits. Initial erosion rates may increase immediately after burning, but herbaceous vegetative cover would increase within a few years and soil erosion would be reduced below or to pre-burn levels. Rest from livestock grazing would enhance this recovery. Treatment areas would be burned in a mosaic pattern leaving patches of burned and unburned vegetation. Because prescribed fire would be implemented under specific fuel and weather conditions that produce low to moderate fire intensity, impacts to soils from superheating of the surface layer would be minimized.

4.2.3.35 Wilson Coulee Allotment

Rangeland conditions would remain static or improve. These sites are meeting standards and no changes have been made to management of livestock except additional fencing on the east and southeast portions of the allotment to better control livestock.

Conditions would remain adequate for long-term stability and health of soils.

4.2.4 Noxious Weeds

Implementation of Alternative 2 would initiate a comprehensive, cooperative weed control effort to systematically treat noxious weeds in the planning area. Priorities would be established utilizing the weed categories outlined in Chapter 2, and the site-specific weed control prescriptions detailed in the Monument Weed plan. Infested acres of noxious weeds would decrease through an aggressive, concentrated effort involving all facets of an integrated weed

management program.

Prescribed fire treatments could lead to a temporary increase in post-burn noxious weed infestations. Canada thistle and houndstongue are particularly problematic noxious weeds following a fire event.

Variable conditions influencing noxious weeds include:

- burn severity
- survival of desired plants
- pre-burn noxious weed cover
- survival of weeds
- reproductive capability of noxious weed species
- pre-burn and post-burn soil moisture
- revegetation

BLM would complete pre-burn noxious weed inventories; identified infestations would be treated with herbicides prior to initiation of burn activities. During the grazing rest period, BLM would continue an integrated weed management program as necessary. After the livestock grazing rest period, BLM would work with permitees in accordance with the cooperative weed control agreements.

Existing infestations of Category 1 noxious weeds would be contained and suppressed utilizing herbicides and biological control. Biological control of leafy spurge has produced very favorable results within the watershed; continual monitoring, dissemination, and new releases of biocontrol agents in addition to continued herbicide control would perpetuate a steady downward trend in leafy spurge acreage. Russian knapweed would be controlled solely with herbicides until an effective bioagent is approved and released. Assertive monitoring would assist in the prevention of new infestations of Category 1 weeds through early detection and control.

Existing infestations of Category 2 noxious weeds would be contained and suppressed or eradicated utilizing herbicides and biological control. Small, relatively new infestations would be eradicated with herbicides. Established, larger infestations of Category 2 weeds would be contained and suppressed with herbicides and applicable biocontrol agents. Assertive monitoring and public awareness/outreach would assist in the prevention of new infestations of Category 2 weeds through early detection and eradication.

Category 3 noxious weeds have not been detected in the watershed area or may be found only in small, scattered, localized infestations. Assertive monitoring and public awareness/outreach would assist in the prevention of new infestations of Category 3 weeds through early detection and eradication.

4.2.5 Recreation

Reduced levels of noxious weeds around campgrounds and hiking trails would improve the quality of recreational opportunities slightly. No other impacts (direct or cumulative) would occur under this alternative.

4.2.6 VRM

There would be no direct or cumulative impacts to VRM from this alternative. Proper livestock management along the river and adjacent riparian areas have a high degree of importance to VRM. There are no livestock improvements and/or exclosures planned at this time along the river. Future projects initiated under adaptive management would be reviewed for visual impacts prior to implementation. Where possible, livestock developments would be placed in areas with higher classification ratings.

Noxious weed control would improve the visual resource, especially from a foreground perspective when they are found and controlled adjacent to roads. Weeds do have a negative impact to the viewer if they are aware of the presence of a non-native species in the environment. Proper noxious weed control often improves wildlife habitat, thereby increasing opportunities for hunting and viewing of big game species.

Projects in the planning area proposed after official implementation of the Monument plan could be subject to possible changes in VRM classification.

4.2.7 OHV

Same as Alternative 1.

4.2.8 Wildlife Resources

Under the proposed action all livestock permittees would be required to meet standards for rangeland health. When all standards for rangeland health have been achieved in the planning area the issues of riparian and upland health would be rectified and noxious weed infestations would be minimized.

Several different approaches to meeting standards have been described in this proposal, each designed to fit the issue that was identified in the allotment and still accommodate the needs of the individual ranching operation.

These proposals would include one or more of the following: (1) BLM development of new upland water sources; (2) BLM and permittee working together to arrive at new grazing systems to provide for the needs of the vegetation, wildlife, and the individual ranching operation (these systems are calling for changes season of use, numbers of livestock, length of use or delayed turn out dates); (3) construction of new fences in two situations; (4) reseed degraded range land with desirable native vegetation; or (5) prescribed burning for improved upland/forest health and reduction of encroaching conifers. (6) Mechanical treatments to remove encroaching conifers. Each of these methods would have a positive effect on the wildlife in the planning area. Project implementation would be designed specifically to minimize impacts to the various species of birds, mammals, fish, amphibians and reptiles known to inhabit the planning area. Special emphasis will be placed on avoiding crucial winter habitats and parturition areas that have been identified.

The proposed action would not affect any T&E species or their associated habitat in a negative manner. Under this proposal the mature cottonwood stands on Evans Bend and Rowe Coulee would maintain and improve bald eagle and the pallid sturgeon habitat. Inventories have not identified sage grouse or suitable habitat in the planning area. There would be no impacts to sage grouse under this or any other alternative. Black tailed prairie dogs are present in several

small towns in the Arrow Creek portion of the planning area but opportunities to improve their habitat are limited. Current policy that allows for expansion of the prairie dog towns onto public land would be continued. The prairie dog towns would provide mountain plover habitat. None of the project proposals in the planning area would negatively impact the available mountain plover habitat. There would be a minimal chance that dog town expansion would occur in Arrow Creek East and Spring Coulee allotments (map M2.3).

This planning document implements an adaptive management approach to insure goals and objects as outlined in section 1.4 are achieved. If certain actions outlined in the proposed action do not move resource conditions towards these goals and objectives, changes would be made to correct the course of action. Adaptive management changes would be implemented under the review of a biologist and an interdisciplinary team. Before changes are implemented, a review of potential impacts to other resources would be conducted. Management adjustments that could adversely affect TES species would not be implemented. Adaptive management actions that allow for adjustments such as shortening the length of the grazing period, fencing, water developments, exclosures, and alternating the rotation patterns would not negatively affect wildlife (direct or cumulatively) because they would be selected with the needs and requirement of wildlife in mind.

No major changes are proposed on the allotments listed in this table. There would be no impacts to wildlife (direct or cumulative) on these allotments:

ABN	Ritland
Arrow Creek Bench	Rowe Coulee
Big View	Seventy Nine Coulee
B Lazy M	Slide Coulee (East & West)
Carter Ferry	Spring Coulee
Cherry Creek	The Canyon
Churchhill Butte	Vidal
Dostal/Engellent	Upper Seventy Nine Coulee
Evers Bench	Widow Coulee
Highwood Creek	Woodcock Coulee
Morrow Place	

The impacts to wildlife associated with the proposed action on these allotments would be similar to those described in Alternative 1, Continuation of Current Management.

If the proposed action is adopted there will be some impact to wildlife resources associated with the following grazing allotments:

4.2.8.1 Arrow Creek Allotments (east and west) and Mutton Coulee Allotments

The proposed rotation with the Mutton Coulee allotment is designed to alternate the season of grazing use. Arrow Creek riparian habitat would benefit from enhanced cottonwood establishment and maintenance of existing stands along Arrow Creek. Development of upland waters on Arrow Creek East would better distribute cattle and also help with cottonwood establishment. Improved riparian habitat on Arrow Creek would benefit all wildlife using the

area. Livestock rotation and distribution changes would improve upland forage for the substantial mule deer herd that use the Arrow Creek area.

4.2.8.2 Baker Bar

The season of use change proposed for Shonkin Creek would improve the riparian habitat, in particular the deciduous shrubs and trees. All wildlife using the area would benefit from the increased cover. The number of pheasants that use this bottom would especially benefit during nesting and hunting season from the increased shrub cover.

4.2.8.3 Bird Coulee Allotment

The proposal to reduce hot season livestock in one pasture would benefit riparian habitat. The proposed summer and fall use along with periodic hot season rest periods would minimize livestock use on buffaloberry, chokecherry, and winterfat. Mule deer would particularly benefit from this action.

4.2.8.4 Blind Canyon Allotment

The prescribed burning proposal (map M3.5) for the allotment would benefit bighorn sheep. Prescribed burns would enhance herbaceous and shrub productivity. The Blind Canyon allotment is in the center of the bighorn occupied habitat (map M3.3) and a good area to provide habitat improvements designed to increase use.

4.2.8.5 Coffee Creek

The proposed fence between Coffee Creek and Melton Coulee allotments would be constructed to allow wildlife passage and would cause no impacts (direct or cumulative) to wildlife.

4.2.8.6 Dog Creek Allotment

Pine encroachment would be best treated mechanically on this allotment. Mechanical tree removal would not rejuvenate herbaceous vegetation to the same degree as the prescribed fires proposed for Stulc, Whiskey Ridge and Blind Canyon allotments. Currently, there are domestic sheep within 2.5 miles of the project proposals. One of the bighorn management goals is to discourage them from intermingling with domestic sheep to minimize the opportunity for disease transmission. Prescribed fire would not be used because it could encourage more bighorn sheep use near domestic sheep due to an increase in highly palatable forbs and shrubs near the domestic sheep herd. Manual thinning was selected as the proposed action because it would not encourage more bighorn sheep use near domestic sheep. The change to higher permitted cattle numbers and a shorter grazing season would be beneficial to wildlife due to improved condition and productivity of herbaceous vegetation.

4.2.8.7 Evans Bend Allotment

The proposed change to winter use on the river pastures would improve the vigor of the native riparian plants and potentially help decrease the abundance of noxious weeds. Whitetail deer, tree nesting raptors and other birds, and pheasants would all benefit from a healthier stand of deciduous trees. The proposed weed management plan would be beneficial to wildlife.

4.2.8.8 Grace Bench Allotment

The proposed reseeding and rest would return this small allotment to productive habitat. The surrounding allotments were noted to have an abundance of winterfat and evidence of concentrated winter game use. The seed mix would include winterfat and other native shrubs to provide winter forage for deer and antelope.

4.2.8.9 Melton Coulee Allotment

The proposed fence between Melton Coulee and Coffee Creek allotments would be constructed to allow wildlife passage and would cause no impacts (direct or cumulative) to wildlife.

4.2.8.10 Reservation Bench Allotment

The proposed two pasture rotation designed to take advantage of the crested wheatgrass pasture for livestock pasture would improve the vigor of the native shrub and herbaceous species. Bighorn sheep and mule deer would benefit from the improved range condition.

4.2.8.11 Stulc Allotment

The prescribed burning proposal (map M3.5) for the allotment would benefit bighorn sheep. The reduction of conifer cover would enhance herbaceous and shrub productivity. The Stulc allotment is a primary area for bighorn sheep lambing (map M3.3) and a good area to provide habitat improvements. Increased forage productivity would help with lambing success. Prescribed burning in this area would attract bighorns and potentially encourage them to stay on the north side of Dog Creek and away from the domestic sheep to the south. Prescribed fire would promote desirable forage for Merriam's turkeys. Increased riparian health by enforcing livestock control on Dog Creek would be beneficial to bighorn sheep, mule deer and the minnow population in the creek.

4.2.8.12 Whiskey Ridge Allotment

The prescribed burning proposal (map M3.5) for the allotment would benefit bighorn sheep. The reduction of conifer cover would enhance herbaceous and shrub productivity. The Whiskey Ridge allotment is on the fringes of bighorn occupied habitat (map M 3.3) and habitat improvements are designed to increase use. Prescribed burning in this area would attract bighorns and potentially encourage them to stay on the north side of Dog Creek and away from the domestic sheep to the south. Prescribed fire would promote desirable forage for Merriam's turkeys. Improved riparian health along Dog Creek by enforcing the proposed rest rotation system would be beneficial to bighorn sheep, mule deer and the minnow population in the creek.

4.2.8.13 Wilson Coulee Allotment

The proposed fence construction to separate Wilson Coulee from Arrow Creek West and Slide Coulee allotments would enhance the riparian and upland habitat on the west side of Arrow Creek in both allotments. This improvement would benefit all wildlife that use the cottonwoods along Arrow Creek and benefit the mule deer herd that spends all year in the drainage.

4.2.9 Wildland Fire Management

Same as Alternative 1.

Forested areas that have been treated with prescribed fire could have low to moderate wildland fire severity, with minimal or no forest crown removal. There would be increased chances of successful suppression efforts.

4.2.10 Prescribed fire

Impacts of prescribed fire are described under the allotments where burns are proposed.

4.2.11 Cultural Resources

Similar to Alternative 1, except some minor beneficial impacts could result from management actions that reduce erosion.

4.2.12 Surface Water

The prescribed burns proposed in the three allotments in the Whiskey Ridge land unit may increase erosion and sedimentation on the areas burned until re-vegetation is successful. The burns would be conducted in a mosaic pattern. This action would provide buffers to trap sediment and reduce erosion from advancing off the burned sites. Only a small amount of the increased sediment production from the burned sites would reach the Missouri River. This small increase would not be detectable in water quality samples. The remainder of the proposed actions in this alternative would improve riparian areas. Increased ground cover by riparian vegetation would increase the amount of sediment trapped and retard stream bank erosion. The cumulative impact of carefully controlled burns and improved riparian areas in the watershed would be improved surface water quality in the Missouri River.

This alternative addresses the TMDL process by

- Identifying and implementing best management practices; improving all uplands and riparian areas to proper functioning condition will improve the sediment trapping ability of the public lands, thus reducing the amount of sediment reaching the water quality impaired streams.
- A public involvement program.
- Implementation mechanisms.
- A monitoring program.

The size of this landscape in relation to the size of the entire Upper Missouri watershed means the improvement in water quality would be real but probably would not be measurable at monitoring sites along the Missouri River.

4.2.13 Ground Water

No direct or cumulative impacts to ground water would occur as a result of this alternative.

4.2.14 Riparian

No major changes are proposed and no direct or cumulative impacts to riparian areas would occur on the allotments listed in this table.

ABN	Ritland
Arrow Creek Bench	Rowe Coulee
Big View	Seventy Nine Coulee
B Lazy M	Slide Coulee (East & West)
Carter Ferry	Spring Coulee
Cherry Creek	The Canyon
Churchhill Butte	Vidal
Dostal/Engellent	Upper Seventy Nine Coulee
Evers Bench	Widow Coulee
Highwood Creek	Woodcock Coulee
Morrow Place	

4.2.14.1 Arrow Creek allotments (east & west)

This allotment is currently meeting the riparian standard. However, the natural barrier between this allotment and the Wilson Coulee allotment in not effective and livestock are passing back and forth between allotments. If this situation continues throughout the hot season, the riparian area may not met standards. The proposed fence between this allotment and the neighboring allotment would eliminate use by livestock from the adjacent allotment and insure that the area continues to meet the riparian standard. Map M-2.2 displays the location of the proposed fence project. This proposal would alternate hot season use so that Arrow Creek would not be grazed more than two years during the hot season. If riparian conditions decline, grazing use would be limited so that hot season use would only occur one year out of three and would not occur in two consecutive years. The two proposed reservoirs in the uplands would attract livestock away from the riparian zone and allow the riparian standard to be met.

4.2.14.2 Baker Bar

The proposed change in season of use by livestock will benefit the riparian area that is currently not meeting standards. The riparian area will exhibit significant progress toward proper functioning condition and thus meet the riparian standard.

4.2.14.3 Bird Coulee Allotment

The proposed change in season of use by livestock would benefit the riparian area that is currently not meeting standards. The riparian area will exhibit significant progress toward proper functioning condition and thus meet the riparian standard.

4.2.14.4 Blind Canyon Allotment

The proposed prescribed burns would create patches of bare ground immediately following the fire. Erosion from the burned site will temporarily increase above pre-burn conditions. Sedimentation will increase downstream of the burned site. The mosaic pattern of burning would leave areas of vegetation that would filter sediment produced from the burned sites. Eliminating grazing for two growing seasons following the burn will allow the area to re-vegetate and eliminate the increased erosion and sedimentation.

4.2.14.5 Coffee Creek Allotment

The proposed fence would cause no impacts (direct or cumulative) to riparian resources.

4.2.14.6 Dog Creek Allotment

Since there are no significant riparian resources on the allotment, the proposed action would have no impact on riparian areas.

4.2.14.7 Evans Bend Allotment

Eliminating hot season will insure the allotment will continue to meet standards. Even though the area is currently meeting the riparian standard, vegetative cover will improve slightly. Increased cover by native vegetation may decrease the coverage by noxious weeds.

4.2.14.8 Grace Bench Allotment

No riparian areas exist in this allotment. The change in season of use and re-seeding would reduce erosion and sedimentation from the uplands in this allotment.

4.2.14.9 Mutton Coulee Allotment

The proposed change in season of use will benefit the riparian area on Mutton Coulee. The riparian area is currently FAR but the cause is not due entirely to livestock grazing. The proposed late season use will allow the riparian area to exhibit an upward trend in vegetative cover and diversity.

4.2.14.10 Melton Coulee Allotment

The proposed fence would cause no impacts (direct or cumulative) to riparian resources.

4.2.14.11 Reservation Bench Allotment

No riparian habitat exists in this allotment. Improving the uplands will reduce the amount of erosion and sedimentation occurring in this allotment.

4.2.14.12 Stulc Allotment

Livestock from an exchange-of-use pasture in this allotment are impacting the riparian areas along Dog Creek. Following Guideline #15 (Appendix A) on the exchange-of-use pasture would allow the riparian areas to continue to make significant progress toward proper functioning condition. If a riparian pasture is developed as noted under adaptive management, this pasture

would benefit riparian resources by providing special management emphasis for Dog Creek.

4.2.14.13 Whiskey Ridge Allotment

The proposed prescribed burns would create patches of bare ground immediately following the fire. Erosion from these bare areas would increase until they re-vegetate. The mosaic pattern of burning would allow the unburned areas to act as a filter and trap any produced sediment from the burned areas. Sediment actually reaching larger tributaries would be minimal. Two growing seasons of rest following the burn would allow re-vegetation and restore erosion and sedimentation rates to pre-burn conditions.

4.2.14.14 Wilson Coulee Allotment

Currently there is no effective barrier between this allotment and the two neighboring allotments to the east and southeast (Arrow Creek East/West & Slide Coulee allotments). Livestock from Wilson Coulee allotment are frequently moving east and southeast and grazing riparian areas along Arrow Creek on these two allotments. The proposed fence would prevent livestock from moving onto the two adjacent allotments from Wilson Coulee allotment. The riparian areas on these two allotments would improve even though they are currently meeting standards. The potential risk of adverse impacts to Arrow Creek riparian areas from stray cattle would be lessened. Map M-2.2 displays the location of the fence project.

4.2.15 Wild and Scenic Rivers

There would be no negative impacts (direct or cumulative) from this alternative. Only a small portion of planning area is located in the Wild and Scenic River. This area is located in Whiskey Ridge. Prescribed burns would be conducted in this area. These burns would have a minor short-term affect on less than 1% of the wild and scenic area. These burns would be light, low intensity fires that would not negatively affect the wild and scenic character of the area.

The Upper River landscape unit of the planning area is not within the Wild and Scenic River because the designation along this stretch (Fort Benton to Coal Banks) is bank to bank.

4.2.16 Economics

Overall, there would be little impact to economic activity in the planning area from implementation of the proposed action. Most of the 32 permittees in the planning area would be unaffected by the proposed action. There have been no AUM reductions as a result of this alternative. The development of adaptive management strategies in this plan would reduce the likelihood of future AUM reductions in comparison to alternative 1.

Of those operations that would be affected, proposed management changes would include construction of range improvements, changes in grazing systems, and changes season of use. Although there would be initial labor costs associated with new projects, all project proposals including prescribed burns would be beneficial to permittees in the long-term. Initial costs to permittees would be lessened because the BLM is providing materials for projects that require substantial amounts of material. The long-term benefits would outweigh the costs of these projects.

Permittees for Stulc, Blind Canyon, and Whiskey Ridge allotments would receive short-term economic impacts as a result of the need to rest portions of these allotments following prescribed fire. The permittee for the Grace Bench allotment would also receive short-term impacts resulting from the need to rest the allotment after reseeding and the cost of for seeding. In most cases the rest period would be two years depending on recovery periods.

There would be no long-term negative economic impacts (direct or cumulative) to agricultural interests as a result of this alternative.

The following is a summary of changes that would affect the permittees.

- **Arrow Creek Allotment (east & west):** Pit reservoirs and fencing
- **Baker Bar:** Deferment of grazing use.
- **Bird Coulee:** Reduction of hot season grazing.
- **Blind Canyon Allotment:** Prescribed fire.
- **Coffee Creek/Melton Coulee Allotments:** Drift fence.
- **Dog Creek Allotment:** Conifer thinning on forest margins. Change in season of use and permitted animal numbers. Turnout of livestock would be delayed until 6/25. Construction of a short drift fence to prevent cattle from wandering into Dog Creek.
- **Evans Bend Allotment:** Elimination of hot season grazing on river portions, increased weed control efforts.
- **Grace Bench Allotment:** Seeding of degraded rangelands.
- **Reservation Bench Allotment:** Implementation of deferred rotation grazing system.
- **Stulc AMP Allotment:** Prescribed burns. Potential pasture realignment and creation of riparian pasture in Dog Creek (pending purchase of base property by Fish, Wildlife & Parks).
- **Wilson Coulee Allotment :** Allotment boundary fence

Increased expenses for labor to complete range improvement projects would be offset by decreased labor needs throughout the fifteen year life of the improvement project.

The following table describes the type of economic impacts and the number of ranching operations that would be affect under this alternative.

	Proposed Action (Alternative 2)		
Economic Impact	Beneficial	Neutral	Adverse
Number of ranches	11	21	0

Improvement of management on eleven allotments would benefit permittees/leasees in the long term. Although there are costs associated with each action, the long-term benefits outweigh the initial costs. Construction of fences results in less trips to the allotment for ranchers. Construction of reservoirs better distributes cattle and often results in higher weaning weights. Prescribed fires and rotation of livestock result in higher production of herbaceous forage. Noxious weed control results in higher quality forage and less plant competition between weeds and forage that is palatable to livestock. Since the BLM plans to cost share these projects, initial costs to permittees would be lessened.

The twenty-two allotments that receive no changes would result in neutral impacts to permittees/leasees. There would be no adverse economic impacts to permittees/leasees (direct or cumulative) as a result of this alternative.

There would be no adverse economic impacts (direct or cumulative) to nonagricultural interests as a result of the proposed action.

4.2.17 Sociology

Some operations would have changes in how they manage their operation. All ranchers whose operations would be changed under this plan have been involved in consultations about their operations and the ability to adapt to these changes. There would be no negative impacts (direct or cumulative) from this alternative. Potential impacts from implementing standards and guidelines are discussed in more detail in the Montana Standards for Rangeland Health and Guidelines for Livestock Grazing Management EIS (page 70) (USDI, BLM, 1996).

4.3 ALTERNATIVE 3 IMPACTS – NO LIVESTOCK GRAZING ALTERNATIVE

4.3.1 Air Quality

Same as Alternative 1

4.3.2 Coniferous Forest

Same as Alternative 1

4.3.3 Rangelands

Under this alternative livestock grazing would cease as existing permits and leases expire. In the short term (5-10 years), upland areas meeting standards would continue to meet standards and upland areas not meeting standards would gradually improve and meet standards. Those areas not meeting standards as a result of non-native plants would continue to lose biodiversity and would not meet standards. In the long-term, some of the uplands in this watershed may be negatively affected by lack of grazing. In addition, an increased potential for spread of wildfires would occur as a result of the build up of fine fuels. Under these conditions, the fires that occur would spread faster and burn more intensely. Rapid spread and high intensity fires would make control more difficult and increase the potential for the fire to escape initial attack and become large and destructive.

Grazing serves as an important mechanism for the cycling of carbon (plant material) in uplands. If domestic grazing activity ceased, an excess build up of litter and mulch in the more productive upland areas would, in the absence of fire, result in a poorly functioning carbon cycle after a period of 10-15 years. On some sites, mulch buildup would reach a point that sunlight would not be able to reach growing points and leaves of grasses. This would cause a decrease in vigor of perennial grasses, especially perennial bunch grasses. In these cases, vegetation composition may shift from high seral to mid or early seral species from lack of grazing. Grazing by wildlife populations would not be sufficient to offset this condition. Increased use of prescribed fire may be needed to stimulate vigor.

4.3.4 Soils

Lack of grazing would slow the rate of nutrient cycling from plant to soil because livestock would not be present to consume plants and cycle nutrients back into the soil, however soils would remain stable and erosion levels minimal during the ten year life of this plan.

4.3.5 Weeds

Implementation of Alternative 3 would eliminate the cooperative weed control agreements between the BLM and grazing permittees. Weed infestations on uplands could increase due to the loss of permittee involvement with BLM weed control efforts. Conversely, the absence of domestic livestock on uplands could decrease the risk of noxious weed spread. Livestock can promote the spread of noxious weeds through the physical movement of reproductive vegetation and seeds, and through the digestive tract.

4.3.6 Recreation

Recreation opportunities would not be increased under this alternative. Same as Alternative 1 and Proposed Action.

4.3.7 VRM

No livestock grazing in the planning area would preclude the necessity to construct water developments in the future.

4.3.8 OHV

Same as Alternative 1 and Proposed Action.

4.3.9 Wildlife Resources

Under this alternative livestock grazing would not be reauthorized as the 10 years grazing permits expire. There are 40 grazing allotments in the planning area. Three allotments (7%) had at least one riparian polygon and three allotments (7%) had at least one upland health transect that rated less than PFC and could be at least partially contributed to livestock grazing. As the permits expire the range health on these degraded allotments would return to functioning condition. The renewed vigor in the upland and riparian vegetation in the previously unhealthy areas would provide additional vegetative diversity, structure, ground cover and forage for wildlife and overall landscape health. There would be no direct or cumulative impacts to wildlife under the no grazing alternative.

4.3.10 Wildland Fire Management

Under this alternative, there is potential for fine fuels such as grass to increase and create continuous fuel beds in rangeland areas. This could contribute to large and swift-moving wildland fires.

Regardless of the alternative chosen, wildland fire suppression will be in accordance with the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment For Montana and the Dakotas (July 2003); the State Director's Interim Guidance for managing the Upper Missouri River Breaks National Monument (June 2001); and the Central Montana Fire Zone Fire Management Plan for Lewistown and Malta Field Offices (draft Feb 2001).

4.3.11 Cultural Resources

Same as Alternative 2.

4.3.12 Surface Water

Vegetation in the riparian areas would improve rapidly as a result of livestock removal. Stubble height would increase as would ground cover, trapping more sediment, building and protecting stream banks and reducing erosion. The amount of non-point source pollution (mainly sediment) from public lands reaching the Missouri River would be reduced thereby complying with the TMDL process.

4.3.13 Ground Water

Ground water resources would not be directly or cumulatively impacted by this alternative.

4.3.14 Riparian

As current grazing permits expire they would not be renewed. Grazing on public lands in the planning area would cease within ten years. Public lands would experience increased plant density, diversity, and vigor as livestock grazing is removed, especially on the riparian areas where livestock is the major factor affecting riparian health. These riparian areas would experience rapid improvement if livestock grazing is eliminated.

4.3.15 Wild and Scenic Rivers

Some river recreation visitors would feel a benefit under the no livestock grazing alternative due to the landscape's aesthetic change to a more pristine or natural experience.

4.3.16 Economics

Under the no grazing alternative, there would be a gradual decline in livestock production from public lands as permits and leases expire. All permittees would be adversely impacted (directly and cumulatively), especially those with high dependence on public land forage. Overall, there would be a decrease of 5,185 AUMs available to the permittees in the watershed. This amounts to a loss of grazing for approximately 1,467 pairs of livestock during a large part of the year. To the regional economy, this represents a loss of about $145,725 annually in economic activity and about six jobs, not including permittee's ranching jobs. The total loss in economic activity may be greater if permittees cannot compensate for the loss of public land AUMs and must reduce their herd sizes. The 18 permittees that are moderate to highly dependent on public land forage in the planning area would receive substantial adverse economic impacts to their entire farm/ranch operation.

The permittees in the planning area are a diverse group with respect to types of operations and level of dependency on public lands to run their operations. Some operators have a relatively low dependence on public land grazing to run their cattle operations. Most also have farming operations. The higher the level of dependence on public land and the less diversity of operations permittees have, the greater the impact.

To avoid a livestock trespass situation, operators would have to fence their cattle off public land. This would be an additional cost to them. The highly intermingled property status in this watershed would require hundreds of miles of fences to separate. In addition, much of the land in the planning area is found on very steep terrain, installing fences directly on property lines is difficult and in some cases impossible.

The following table describes the type of economic impacts and the number of ranching operations that would be affected under this alternative.

No Grazing (Alternative 3)			
Economic Impact	Beneficial	Neutral	Adverse
# of Ranches	0	0	32

A no grazing alternative would have adverse economic impacts to all 32 permittees in the planning area.

Economic impacts (direct and cumulative) to recreational based businesses such as outfitters would range form neutral to beneficial.

4.3.17 Sociology

Loss of BLM forage could result in declines in the social well being of affected permittees/leasees and their families. Direct and cumulative sociological impacts would be negative. Small operations that are highly dependent on public grazing lands are more likely to be affected. Over half of the farm/ranch operations in this planning area are moderate to highly dependent upon BLM grazing to run their operation. More detailed potential effects are discussed in the Draft Prairie Potholes Vegetation Allocation EIS (page 122) (USDI; BLM, 1981).

Chapter 5.0 Consultation and Coordination

The BLM interdisciplinary team that prepared or assisted with the preparation of this Landscape Environmental Assessment/Plan includes:

- Mitch Iverson, Team Leader/Rangeland Management Specialist
- Joe Frazier, Hydrologist
- Sharon Gregory, Range Technician
- Betty Westburg, Range Technician
- Stanley Jaynes, Archaeologist
- Loretta Park, Realty Specialist
- Kaylene Patten, Facilitator & GIS Tech.
- Fred Roberts, Wildlife Biologist
- Jennifer Walker, Fuels Technician (Range/Forestry)
- Rod Sanders, Recreation Specialist
- Lowell Hassler, Natural Resource Management Specialist (Weeds)
- Terry Holst, Rangeland Management Specialist

Other BLM personnel who provided assistance:

- Craig Flentie, Public Affairs Specialist
- Jerry Majerus, NEPA Coordinator
- Chuck Otto, Assistant Field Manager
- JoLyn Goss, Office Assistant
- Kay Haight, Office Assistant
- Vinita Shea, Rangeland Management Specialist
- Mike Barrick, Range Technician

Other agency personnel that were notified or involved during the planning process:

- Tom Stivers, Montana Department of Fish, Wildlife and Parks
- Mike Frisina, Montana Department of Fish, Wildlife and Parks
- Ann Tewes, Montana Department of Fish, Wildlife and Parks
- Bill Gardner, Montana Department of Fish, Wildlife and Parks
- Barny Smith, Montana Department of State Lands
- Ted Hawn, NRCS, Lewistown
- Shawn Morgan, DNRC, Lewistown

All grazing permittees and leasees were contacted by phone and mail during the landscape planning process. The BLM met with individual grazing permit/lease holders on 21 occasions in the field. Three public meetings were held between 2001 and 2003. The BLM also hosted one group field trip in June 2002 to discuss monitoring and issues related to the watershed plan.

6.0 Comments and Responses:

Section Content

6.1 Summary of public comments:

Three public meetings were held between January 2002 and November 2003. A public field trip was held on June 12, 2002. BLM staff meet with grazing permitttees/leasees in the field on 21 occasions. A draft environmental assessment and plan was released for public comment on November 25, 2003. A public meeting was held on December 8, 2003 to discuss the draft EA/plan and solicate comments from the public. The BLM received 16 comments on the draft EA/plan. The comments and response to the comments are listed below:

Comment 1: The BLM needs to recognize that grazing rotations are often determined by water availability.

Response to comment 1: The BLM took into account fluctuations of stock water availability in allotments when developing grazing systems. In years of limited water availability, permittees/leasees can adjust the rotation schedule or turn out dates as long as the BLM is consulted in advance and such changes are not detrimental to other resources on the allotment.

Comment 2: Riparian areas in Dog Creek are affected by massive periodic flows.

Response to comment 2: The BLM takes into account the impact of flood events and the resultant disturbance caused by large flows when conducting assessments. If a riparian area is not meeting the riparian standard, the cause is determined. Changes to grazing management are not made if the cause in the decline in riparian condition is related to natural events.

Comment 3: Water quality in Dog Creek is never going to be good because it drains numerous fields from Hilger to the Missouri River. Cattle have little effect on the creek.

Response to comment 3: The BLM recognizes that water quality is a large scale issue that encompasses all lands in the Dog Creek watershed. The Montana Dept. of Environmental Quality lists Dog Creek as a water quality impaired stream. Probable impaired uses are drinking water and agriculture. Probable impaired causes are other inorganics, salinity, total dissolved solids, and chlorides. Probable sources of these causes are agricultural practices (including livestock grazing) and natural sources. The portion of Dog Creek on public lands was listed impaired due to the condition of riparian areas. Livestock grazing is one factor preventing the riparian areas from achieving proper functioning condition. In this plan, BLM is proposing to eliminate, continuous hot season grazing and trespass livestock on its riparian areas in Dog Creek.

Comment 4: I support alternative 2 (proposed action) and oppose alternative 3 (no grazing).

Response to comment 4: Comment noted.

Comment 5: I support alternative 2 (proposed action) because the assessment report is logical and shows cooperation between the BLM and permittees.

Response to comment 5: Comment noted.

Comment 6: We must maintain grazing on BLM lands to support the farm/ranch economy.

Response to comment 6: Comment noted.

Comment 7: I oppose alternative 3 (no grazing) because there are 18 permittees who are moderately/highly dependent on public land grazing and these permittees would suffer economically in the farm/ranch operation.

Response to comment 7: Comment noted.

Comment 8: The fuel buildup and potential for large, swift moving fires and threat local communities is disturbing.

Response to comment 8: The BLM has taken measures to address concerns about fuel build up in the Whiskey Ridge Area. These measures include prescribed fire and thinning of dense forests.

Comment 9: Wild turkeys are present on Whiskey Ridge but were not listed in the plan.

Response to comment 9: Wild turkeys were listed as a game species in the final EA/plan.

Comment 10: There are no fences between the Missouri River and the black lines designating the grazing allotments. Therefore, the allotment lines are incorrect.

Response to comment 10: Many of the black lines designating the boundaries of allotments are based on natural barriers that restrict livestock movement. Fences account for only a small percentage of the boundaries in this area.

Comment 11: Page 46, paragraph 1 should include something about state land that is part of the allotments involved.

Response to comment 11: Reference to state lands was placed in this section.

Comment 12: Page 34 (3.19) You should add another bullet that DNRC may travel cross county for administration of state lands.

Response to comment 12: A clarification was added on page 37 stating that the BLM may allow the state to travel cross-country for administrative purposes in cases where no roads are available to access State lands.

Comment 13: The present management of riparian systems appears to be failing and the cottonwood forests are in precipitous decline. All appearances point to cattle grazing as the primary impact. Even with warm season limitations on grazing improvement in riparian areas is not evident and critical habitat continues to decline.

Response to comment 13: The plight of the riparian habitat along the Upper Missouri Wild and Scenic River (UMWSR) has been noted and discussed by various individuals, State and Federal agencies since the 1950's. In 1988, the BLM contracted with the Montana Riparian Association/University of Montana to inventory all riparian habitat along the 149 mile stretch of the UMNWSR.

The inventory indicated that approximately 50% of the riparian habitat that existed at the time of the Lewis and Clark expedition is gone, most of it converted to cropland. Studies by the BLM and USGS on the remaining habitat suggest it is in danger of disappearing because of flow alteration and livestock grazing practices.

The BLM, in its watershed planning process, has been addressing the livestock grazing issue. The main focus has been to eliminate continual, hot season grazing from those areas considered to have potential for riparian vegetation establishment and succession. Outstanding success has been observed on some sites, while other sites have shown only limited success.

The results of the BLM and USGS studies indicate that livestock control can be effective in riparian establishment and succession. However, without the ability of the river to periodically flood and meander, the total number of riparian acres will gradually decline. Conversely, any new seedlings sites that do establish as a result of the small degree of high flows currently occurring require protection from livestock, excessive recreation use, and other activities to insure their survival and succession.

Comment 14: Cattle should be eliminated from the majority of riparian areas with watering corridors and off river watering areas developed.

Response to comment 14: The BLM, in its watershed planning process, has been addressing the livestock grazing issue. As described in the response to comment 13, the main focus has centered around eliminating continual, hot season grazing from those areas considered to have potential for riparian vegetation establishment and succession. In many cases large, significant riparian areas have been excluded from livestock grazing through the construction of fenced exclosures. Elimination of livestock grazing from the majority of riparian areas and construction of watering corridors would be very difficult because many of the riparian areas along the river extend onto private or state land. In addition, construction of watering corridors would require large amounts of fence. This would result in visual concerns for floaters and recreationists and maintenance workloads beyond the current capacity of current BLM budgets and staffing.

Comment 15: Plans should be made to make the portion of Dog Creek that flows through the Stulc allotment into a riparian pasture.

Response to comment 15: A plan to manage Dog Creek as a riparian pasture was developed as a secondary option in the final document. The current management of State and private lands on the Stulc allotment is in a state of flux and the proposed action was written to accommodate the potential changes.

Comment 16: The BLM's plan should be coordinated with the Fish Wildlife & Parks proposal on Whisky Ridge.

Response to comment 16: BLM has been actively communicating with the Fish, Wildlife & Parks during this planning process.

In addition to the comments listed above, a new grazing proposal was received by a grazing permittee on March 8, 2004. In summary this proposal was a request to shorten the season on Dog Creek allotment from May 5 - Oct. 15 to June 25 - Oct. 5. This proposal also included a request to change permitted cattle numbers from 81 head to 120 head so that the same AUMs are used. An interdisciplinary team discussed this proposal and found it favorable for management of resources on the allotment. The proposal was added to the Landscape EA/plan proposed action (chapter 2) and evaluated for impacts in chapter 4.

APPENDICES

Contents

Maps

Upper River Land Unit

Arrow Creek Land Unit

Whiskey Ridge Land Unit

Guidelines for Grazing Management - Appendix A

Guideline #1: Salting and supplemental feeding

If salt and/or mineral are provided to livestock, they will be placed a minimum of 1/4 mile from riparian areas (including both reservoirs and creeks) and stock water tanks. Salt and/or mineral placement locations will be rotated periodically (once each grazing season at a minimum). Supplemental feeding will not be allowed except to accomplish resource objectives.

Guideline #2: Riparian stubble height

Adequate vegetative stubble heights will remain on plants identified as having deep binding root mass at the end of the grazing season to provide streambank stability, trap and filter sediment, improve water quality, and to facilitate meeting site-specific objectives. Average vegetative stubble heights will be four inches for grasses and shrubs. Utilization of trees and shrubs will not exceed 25% of the 2nd year and older available leaders. Plants with a deep binding root mass include trees (cottonwood, green ash, box elder, and peachleaf willow), shrubs (sandbar and yellow willow, dogwood, chokecherry, buffaloberry, golden and buffalo currents), forbs (cattail and American licorice), and grasses (western wheatgrass, slough grass, cord grasses, sedges and rushes).

Guideline #3: Utilization of upland grasses

Utilization on key grass species in upland areas will not exceed 50% by weight or 4 inch stubble height at the end of the grazing season. Sage grouse nesting areas have different site-specific objectives.

Guideline #4: Grazing systems

When practical, rotational or rest rotation type grazing systems will be used to maximize the amount of rest on the allotment during the growing season and/or break up the cycle of continuous hot season use on riparian areas. At a minimum, portions of an allotment under rotational grazing should receive periodic rest during the growing season and hot season grazing should not occur each year on any given pasture. Season-long or year-round grazing will be discontinued if standards for rangeland health are not met.

Guideline #5: Surface disturbance and seeding

Permittee must notify the BLM prior to conducting any surface disturbing activities on public land. Areas that are disturbed by fire or mechanical means will be rested two growing seasons. Native plant species will be used for reclamation of all disturbed areas. The only time non-native seed should be used is when there is a lack of native seed availability following large scale fires or the use of sterile non-native annual grasses is necessary to achieve rapid site stability and/or reduce the threat of noxious weeds.

Guidelines for Grazing Management - Appendix A

Guideline #6: Pasture moves

Pasture move dates as shown in this watershed plan are an estimate, actual move dates should be based on resource conditions and forage utilization. Any pasture moves exceeding five days past the scheduled move date will be made with concurrence of the BLM. Earlier or later move dates could be required or permitted based on resource or livestock conditions or if the guidelines for upland utilization or riparian stubble heights are exceeded or are yet to be reached.

Guideline #7: Changes in scheduled use

Any deviation from scheduled use must be applied for by the permittee and approved by the BLM manager prior to any changes taking place. The guidelines for upland utilization, riparian stubble heights and progress toward meeting site-specific objectives will be evaluated when reviewing requests for deviation from scheduled use. Requests to change use will not be granted unless it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems and site-specific objectives.

Guideline #8: Drought

During periods of drought, or at the earliest possible time when it becomes apparent that drought conditions are likely, the BLM and permittees will meet to discuss and arrange management changes needed to reduce resource impacts and continue progress toward meeting specific objectives (Refer to BLM Montana, North Dakota and South Dakota drought policy).

Guideline #9: Terms and conditions/management prescriptions

Management prescriptions are identified on a site-specific basis and will be implemented as terms and conditions of the grazing permit/lease. Permittees should provide periodic input to BLM on needed adjustments to grazing plans so that refinements can be made to improve resource conditions.

Guideline #10: Water developments

Locate facilities (water developments, etc) away from riparian-wetland areas. Water tanks must have an escape ramp, float valve and overflow pipe to eliminate over flow around tank.

Guideline #11: Weeds

Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical).

Guidelines for Grazing Management - Appendix A

Guideline #12: Water quality

Livestock management should utilize practices such as those referenced by the published Natural Resources Conservation Service (NRCS) prescribed grazing technical guide to maintain, restore or enhance water quality.

Guideline #13: Threatened, endangered and sensitive species

Grazing management should maintain or improve habitat for federally listed threatened or endangered species and any state listed sensitive species. BLM will keep permittees informed of changes in listing status of any species known to exist on their allotment.

Guideline #14: Native plants

Grazing management should maintain or promote the physical and biological conditions to sustain native populations and communities.

Guideline #15: Control of livestock

Control of livestock is the permittee's responsibility. Monitoring should be conducted by permittee to insure livestock are in proper locations. Livestock that are allowed to freely roam to public lands on adjacent allotments will be treated as trespass livestock. Additional monitoring will be conducted by the BLM to insure this guideline is met.

Standards for Rangeland Health - Appendix B

Standards are statements of physical and biological condition or degree of function required for health sustainable rangelands. Achieving or making significant and measurable progress towards these functions and conditions is required of all uses of public rangelands. Historical data, when available, should be used when assessing progress towards these standards.

Standard #1: Uplands Are In Proper Functioning Condition

This means that soils are stable and provide for capture, storage and safe release of water appropriate to soil type, climate and landform. The amount and distribution of ground cover (i.e., litter, live and standing dead vegetation, microbiotic crusts, and rock/gravel) for identified ecological site(s) or soil-plant associations are appropriate for soil stability.

Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface scaling and compaction layers below the soil surface is minimal. Ecological processes including hydrologic cycle, nutrient cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

Physical Environment

- erosional flow patterns
- surface litter
- soil movement by water and wind
- soil crusting and surface sealing
- compaction layer
- rills
- gullies

Biotic Environment

- cover distribution
- community richness
- community structure
- exotic plants
- plant status
- seed production
- recruitment
- nutrient cycle

Standards for Rangeland Health - Appendix B

Standard #2: Riparian And Wetland Areas Are In Proper Functioning Condition

This means that the functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water and vegetation.

Riparian-wetland areas are functioning properly when adequate vegetation, landform or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood water retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for native fish production, waterfowl breeding, and other uses appropriate for the area that will support greater species richness.

The riparian-wetland vegetation is a mosaic of species richness and community structure serving to control erosion, shade water, provide thermal protection, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase recharge of groundwater where appropriate to landform.

The stream channels and flood plain dissipate energy of high water flows and transport sediment appropriate for the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity), climate, and landform.

Soils support appropriate riparian-wetland vegetation, allowing water movement, filtering sediment, and slowing ground water movement for later release. Stream channels are not entrenching beyond natural climatic variations and water levels maintain appropriate riparian-wetland species.

Riparian areas are defined as land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

Hydrologic

- floodplain inundated in relatively frequent events (1-3 years)
- amount of altered streambanks
- sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region); and upland watershed not contributing to riparian degradation.

Erosion/Deposition

- plain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy
- point bars are being created and older point bars are being vegetated
- lateral stream movement is associated with natural sinuosity
- system is vertically stable

- stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Vegetation

- reproductive and diverse age class of vegetation
- diverse composition of vegetation
- species present indicate maintenance of riparian soil moisture characteristics
- streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events
- utilization of trees and shrubs
- riparian plants exhibit high vigor
- adequate vegetative cover present to protect banks and dissipate energy during high flows
- where appropriate, plant communities in the riparian area are an adequate source of woody debris

Standard #3: Water Quality Meets Montana State Standards

This means that surface and ground water on public lands fully support designated beneficial uses described in the Montana Water Quality Standards. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- dissolved oxygen concentration
- pH
- turbidity
- temperature
- fecal coliform
- sediment
- color
- toxins
- others: ammonia, barium, boron, chlorides, chromium, cyanide, endosulfan, lindane, nitrates, phenols, phosphorus, sodium, sulfates, etc.

Standards for Rangeland Health - Appendix B

Standard #4: Air Quality Meets Montana State Standards

This means that air quality on public lands helps meet the goals set out in the State of Montana Air Quality Implementation Plan. Efforts will be made to limit unnecessary emissions from existing and new point or non-point sources.

The BLM management actions or use authorizations do not contribute to air pollution that violates the quantitative or narrative Montana Air Quality Standards or contributes to deterioration of air quality in selected class area.

As indicated by:

Section 176(c) Clean Air Act which states that activities of all federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:

- cause or contribute to any violations of ambient air quality standards
- increase the frequency of any existing violations
- impede the State's progress in meeting their air quality goals

Standard #5: Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in BLM Manual 6840, Special Status Species Management)

This means that native plant and animal communities will be maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant lifeforms. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Management for indigenous vegetation and animals is a priority. Ecological processes including hydrologic cycle, and energy flow, and plant succession are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential, and there is a diversity of plant and animal species characteristic of and appropriate to the site. The environment contains components necessary to support viable populations of a sensitive/threatened and endangered species in a given area relative to site potential. Viable populations are wildlife or plant populations that contain an adequate number of reproductive individuals distributed on the landscape to ensure the long-term existence of the species. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- plants and animals are diverse, vigorous and reproducing satisfactorily noxious weeds are absent or insignificant in the overall plant community
- spatial distribution of species is suitable to ensure reproductive capability and recovery
- a variety of age classes are present
- connectivity of habitat or presence of corridors prevents habitat fragmentation
- species richness (including plants, animals, insects and microbes) are represented
- plant communities in a variety of successional stages are represented across the landscape.

Monitoring and Evaluation - Appendix C

Key areas would be established for upland and riparian utilization. Existing upland study sites would continue to be used and additional sites may need to be established. One riparian study site would need to be established. There should be a minimum of one upland and one riparian study site per pasture unless no significant riparian habitat exists in the pasture.

Monitoring would be collected by permittees and the BLM. Permittees would be responsible to constantly monitor livestock distribution, utilization levels, and stubble heights on their allotments to ensure that livestock grazing is consistent with established guidelines. Monitoring would be conducted according to the Monitoring for Success guidebook (DNRC, August, 1999). Permittees would be responsible to send data and photos of each monitoring site yearly to BLM. The photos would be taken following grazing use. Photos would be reviewed and if there is concern about the site then the BLM would plan to monitor the site the next year.

Monitoring would be conducted utilizing the key species dominant at each study site. In most cases, key upland species would be western wheat grass, green needle and blue bunch wheat grass.

Upland study plots are marked by a steel witness post set at approximately 100 feet south of marker disc. Permittees would take one general landscape photo taken from the marker disc facing away from witness post. Another photo would be taken directly at ground near angle iron or rebar stakes which are six feet from steel disc. Photos for riparian monitoring sites would be taken from the upstream end of the study reach looking downstream.
BLM would monitor sites (riparian and upland) according to their present condition rating:

- Proper Functioning Condition sites: every 5 years
- Functioning At Risk sites: every 2-3 years
- Non-Functioning sites: yearly

Appendix D lists the upland and riparian monitoring schedule by study plot.

BLM personnel will be available to provide monitoring training for permittees.

First order fire effects would be monitored following the prescribed burns.

Evaluation of monitoring data would occur yearly. A landscape evaluation would need to be completed within 10 years for permit renewal. The BLM may require permit/lease holders to monitor conditions on allotments in the future.

APPENDIX D: Upland Health Assessments - 2001 and 2002

Allotment number and study number	Allotment	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Soil Surf. Factor	Monitoring Schedule
09761-01	Arrow Creek Bench	60 late	Up	None/Slight	28	3-5 years
20040-01	Arrow Ck East	40 mid	Down	Slight to Moderate	29	3-5 years
20040-02	Arrow Ck East	67 late	Static	Slight to Mod.	19	3-5 years
09649-01	ABN	55 late	static	Slight to Moderate		3-5 years
20010-01	Blind Canyon AMP	58 late	down	Slight to Mod.	13	3-5 years
09755-01	Bird Coulee	67 late	down	Slight to Mod.	30	2 years
09755-02	Bird Coulee	68 late	down	Moderate	30	2 years
02521	Baker Bar	20 low	down	Moderate	37	3-5 years
09825	B Lazy M	60 late	up	None/Slight	5	3-5 years
09683-IR1	Coffee Ck	59 late	up	None/Slight	0	3-5 years
09683-IR2	Coffee Ck	50 late	up	None/Slight	9	3-5 years
09657-01	Carter Ferry	45 mid	down	Moderate	25	3-5 years
09693-01	Dostal	47 mid	up	Slight	14	3-5 years
09797-01	Evans Bend	46 mid	static	Moderate	12	1-2 years
09864-01	Grace Bench	24 low	down	extreme	53	1-2 years
09864-01	Gibbon Place	74 late	up	None/Slight	3	3-5 years
20033-02	Gibbon Place	50 late	up	None/Slight	5	3-5 years
09703-IRH	Melton Coulee	61 late	up	None/Slight	13	3-5 years
09811	Morrow Place	65 late	static	Slight/mod.	17	3-5 years
09767-01	Rowe Coulee	60 late	down	Slight/mod.	9	3-5 years
10041-01	Reservation Bench	74 late	down	moderate	25	1-2 years
10041-02	Reservation Bench	35 mid	down	moderate	16	1-2 years

Allotment number and study number	Allotment	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Soil Surface Factor	Monitoring Schedule
20079-01	Seventy Nine Coulee	99 PNC	static	None/Slight	7	3-5 years
09847-01	Slide Coulee	67 late	up	None/Slight	8	3-5 years
09847-01	Slide Coulee	51 late	up	Slight	16	3-5 years
20075-IR1	Spring Coulee	28 mid	down	Mod/extreme	19	2 years
20075	Spring Coulee	50 late	static	Mod/extreme		2 years
20081-1-1	Stulc AMP	39 mid	up	Slight/mod.		3 years
20081-2-1	Stulc AMP	72 late	up	Slight/mod.	1	3 years
20081-3-1	Stulc AMP	73 late	up	Slight/mod.	2	3 years
20081-4-1	Stulc AMP	47 mid	up	Slight/mod.	7	3 years
02517-01	Wood Cock Coulee	66 late	up	None/Slight	7	3-5 years
09866-01	Wilson Coulee	98 PNC	static	Slight/mod.	27	3-5 years
15132-01	Whiskey Ridge	45 mid	up	None/Slight	2	3-5 years
02538-01	Vidal	40 mid	up	Slight/mod.	1	3-5 years

The monitoring schedule was established based on current resource conditions and the need to assess impacts of proposed changes. Random visits will also be taken to the allotments listed above to assess overall conditions. The schedule shown above does not include monitoring of restoration or prescribed fire projects.

APPENDIX E
Riparian Health Assessments

Allotment Name	Stream name/polygon #	Health Rating	Distance (Miles)
ABN	Missouri River/55	61 FAR	0.2
Baker Bar	Shonkin Creek/1	68 FAR*	0.3
Big View	Missouri River/52	67 FAR	0.2
Churchill Butte	Missouri River/53	67 FAR	0.3
Coffee Creek	Coffee Creek/2	93 PFC	1.4
Evans Bend	Missouri River/49	52 NF	1.9
Evans Bend	Missouri River/50	58 NF	0.6
Evans Bend	Missouri River/51	42 NF	0.8
Melton Coulee	Unnamed tributary to Coffee Creek/1	62 FAR	1.5
Mutton Coulee	Mutton Coulee/1	71 FAR	2.5
Rowe Coulee	Missouri River/54	67 FAR	0.7
Slide Coulee	Engallant Coulee/1	62 FAR*	0.8
Spring Coulee	Spring Coulee/1	81 PFC	1.0
Spring Coulee	Slide Coulee/1	51 NF	1.2
Stulc AMP	Dog Creek/1	67 FAR	0.5
Stulc AMP	Dog Creek/2	67 FAR	0.5
Stulc AMP	Dog Creek/3	67 FAR	1.1
Stulc AMP	Dog Creek/4	67 FAR	1.2
Stulc AMP	Dog Creek/5	72 FAR	1.1
Teton Land Corp.	Bird Coulee/1	73 FAR*	1.0
Teton Land Corp.	Unnamed tributary to Bird Coulee	72 FAR*	1.1
Whiskey Ridge	Dog Creek/1	79 FAR	1.0
Whiskey Ridge	Dog Creek/2	77 FAR	0.9
Whiskey Ridge	Dog Creek/3	75 FAR	1.4
Whiskey Ridge	Dog Creek/4	74	1.3
Whiskey Ridge	Unnamed tributary to Dog Creek/1	38 NF	1.0
Whiskey Ridge	Unnamed tributary to Missouri River/1	55 NF	0.8

*** (Riparian areas where livestock are a major factor affecting the health rating)**

APPENDIX F
Corrective Adjustments for Resource Protection

The guidelines described in Appendix A are considered best management practices necessary to achieve objectives identified in this plan and to maintain or improve rangeland resources. Livestock use that exceeds the guideline will reduce the ability to maintain proper range conditions. The success of these guidelines is dependent on active involvement by the livestock permittees in the day-to-day management of allotments.

If the guidelines are exceeded and overuse does occur, corrective actions should be implemented during the next grazing season to insure that such use does not occur again and prevent necessary vegetative recovery from occurring. In such instances, prior to the next grazing season, the permittee(s) and BLM manager should cooperatively develop these corrective adjustments. The recommended management adjustments identified below are a tool that can be used, modified, or added to, on a case by case basis. The BLM would prefer that the grazing permittee(s) suggest corrective actions needed to maintain vegetative health and vigor while still meeting livestock management needs. If however, a cooperatively developed corrective adjustment cannot be reached, the following adjustments will be applied:

Recommended Stubble Height for Riparian Species = 4 Inches

Actual Stubble Height (inches)	Corrective Adjustment
3 to 4 inches any one year	Discuss situation with permittee
3 to 4 inches two consecutive years	5 inch stubble height the next year
3 to 4 inches more than two consecutive years	6 inch stubble height the next year
2 to 3 inches any one year	5 inch stubble height the next year
2 to 3 inches two consecutive years	6 inch stubble height the next year
2 to 3 inches more than two consecutive years	Rest the pasture the following year
Less than 2 inches in any one year	Rest the pasture the following year

Recommended Riparian Tree and Shrub Utilization = Light to Moderate Browsing

Actual Browse Level (Light, Moderate, or Intense)	Corrective Adjustment
Light to Moderate	No adjustment necessary
Intense any one year	Discuss situation with permittee
Intense two consecutive years	Eliminate hot season (July, August and September) grazing either through change in season of use or some form of fencing

Recommended Upland Species Utilization Level = 50% by Weight

Actual Utilization Level (%)	Corrective Adjustment
Exceeds prescribed level by more than 10% but less than 25%	Discuss situation with permittee
Exceeds prescribed level by more than 25%	Discuss situation with permittee. Limit utilization to 40% the following year.

APPENDIX G
Upland and Riparian Plant List

Common Upland Plants:

Trees:
Ponderosa pine (Pinus ponderosa)
Douglass-fir (Pseudotsuga menziesii)

Shrubs:
Big sage brush (Artemisia tridenta)
Silver sage brush (Artemisia cana)
Greasewood (Sarcobatus vermiculatus)
Juniper (Juniperus sp.)
Prairie rose (Rosa woodsii)
Yucca (Yucca glauca)
Saltbrush (Atriplex confertifolia)
Winterfat (Ceratoides lanata)

Native Perennial Grasses:
Western wheatgrass (Pascopyrum smithii)
Bluebunch wheatgrass (Pseudoroegneria spicata)
Prairie junegrass (Koleria macrantha)
Sandberg bluegrass (Poa sandbergii)
Green needle grass (Stipa viridula)
Needle & thread grass (Stipa comata)
Blue grama (Butealoa gracilis)
Prairie sandreed (Calomovilfa longifolia)

Domestic Perennial Grasses:
Crested wheatgrass (Agropyron cristatum)
Intermediate wheatgrass (elytrigia intermedia)
Smooth brome (Bromus inermis)

Annual Grasses:
Japanese brome (Bromus japonicus)
Cheatgrass (Bromus tectorum)

Forbs:
Yellow sweet clover (Melilotus officinale)
Dandelion (Taraxcum officinale)
Phlox (Phlox hoodii)
Salisify (Trogopogon dubious)
Fringed sagewort (Artemisia filifolia)
Yarrow (Achillea millifolium)
American vetch (Vicea americanum)

Succulents
Prickly pair cactus (Opuntia polycantha)
Pin cushion (Coryphantha vivipara)

Common Riparian Plants:

Trees:
Boxelder (Acer negundo)
Cottonwood (Populus deltoids)
Green Ash (Fraxinus pennsylvanica)
Peachleaf Willow (Salix amygdaloides)

Shrubs:
Buffaloberry (Shepherdia argentea)
Buffalo Current (Ribes odoratum)
Chokecherry (Prunus virginiana)
Golden Current (Ribes aureum)
Red Osier Dogwood (Cornus stolonifera)
Sandbar Willow (Salix exigua)
Yellow Willow (Salix lutea)

Forbs:
American Licorice (Glycyrrhiza lepidota)
Cattail (Typha latifolia)
Cocklebur (Xanthium strumarium)
Curled Dock (Rumex crispus)
Horsetail (Equisetum arvense)
Mint (Mentha arvensis)
Sweetclover (Melilotus officinalis)
White Sweetclover (Melilotus alba)

Grasses:
Baltic Rush (Juncus balticus)
Barnyardgrass (Echinochloa muricata)
Bulrush (Scripus maritimus)
Creeping Spikesedge (Eleocharis palustris)
Foxtail Barley (Hordeum jubatum)
Hardstem Bulrush (Scripus acutus)
Inland Saltgrass (Distichlis spicata)
Kentucky Bluegrass (Poa pratensis)
Orchardgrass (Dactylis glomerata)
Prairie Cordgrass (Spartina pectinata)
Quackgrass (Agropyron repens)
Reed Canarygrass (Phalaris arundinacea)
Sloughgrass (Beckmannia syzigachne)
Smooth Brome (Bromus inermis)
Three-Square Bulrush (Scirpus pungens)
Western Wheatgrass (Agropyron smithii)

APPENDIX H

CURRENT ALLOTMENT MANAGEMENT PLANS

Allotment	Grazing Plan
Arrow Creek East & West	Summer grazing
Arrow Creek Bench	Season-long
Blind Canyon	Two-pasture deferred rotation
Coffee Creek	Season-long
Dog Creek	Two pasture deferred rotation
Dostal	Three pasture rotation
Melton Coulee	Season-long
Slide Coulee	Season-long
Stulc	Five Pasture Rest Rotation
Whiskey Ridge	Five Pasture Rest Rotation

APPENDIX I
Montana Noxious Weed List

Canada thistle (Cirsium arvense)
Field bindweed (Convolvulus arvensis)
Whitetop or Hoary cress (Cardaria draba)
Leafy spurge (Euphorbia esula)
Russian knapweed (Centaurea repens)
Spotted knapweed (Centaurea maculosa)
Diffuse knapweed (Centaurea diffusa)
Dalmatian toadflax (Linaria dalmatica)
Sulfur (erect) cinquefoil (Potentilla recta)
Common tansy (Tanacetum vulgare)
Ox-eye daisy (Chrysanthemum leucanthemum L.)
Houndstongue (Cynoglossum officinale L.)
Dyers woad (Isatis tinctoria)
Purple loosestrife (Lythrum salicaria, L. virgatum, and any hybrid crosses thereof).
Tansy ragwort (Senecio jacobaea L.)
Meadow hawkweed complex (Hieracium pratense, H. floribundum, H. piloselloides)
Orange hawkweed (Hieracium aurantiacum L.)
Tall buttercup (Ranunculus acris L.)
Tamarisk [saltcedar] (Tamarix spp.)
Yellow starthistle (Centaurea solstitialis)
Common crupina (Crupina vulgaris)
Rush skeletonweed (Chondrilla juncea)

The following are designated as watch list weeds:

White Bryony (*Bryonia alba*)
Flowering Rush (*Butomus umbellatus*)
Blueweed (*Echium vulgare*)
Hydrilla (*Hydrilla verticillata*)
Scentless Chamomile (*Matricaria martima*)

APPENDIX J
Land Use Plan Guidance

- **Energy Mineral Resources:** No surface occupancy restrictions will be used to protect critical paleontology sites and archeology sites. Seasonal and distance restrictions will be included in oil and gas leases to mitigate impacts to wildlife habitat **(JVP, Interim Monument Guidance)**.

  The UMNWSR Corridor and the Missouri River Breaks Monument are closed to mineral leasing. Exploration activity will avoid, to the maximum extent possible, the Aseen area@ of the management corridor, and will utilize accepted principals of landscape architecture to minimize temporary and permanent visual impacts **(West HiLine, Interim Monument Guidance)**.

- **Non-energy Mineral Resources:** Federal minerals are available for exploration and development unless withdrawn **(JVP)**. The entire UMNWSR management corridor and the Missouri River Breaks Monument are withdrawn from location under the mining laws **(West HiLine, Interim Monument Guidance)**.

- **Paleontology:** Major paleontological resources of scientific interest will be protected **(JVP, West HiLine, Interim Monument Guidance)**.

- **Soils:** Soil productivity will be maintained or improved by increasing vegetation cover and reducing erosion **(JVP, West HiLine, Standards and Guidelines)**.

- **Water Resource Management:** Surface and ground water quality will be maintained to meet or exceed state and federal water quality standards **(JVP, West HiLine, Standards and Guidelines)**.

- **Vegetation Management:** The ecological status will be improved or maintained to achieve a plant community of good (late seral) to excellent (potential natural community) on 80% of the public lands within 15 years of implementation of activity plans **(JVP)**.

  Public lands that are in satisfactory (good and excellent) ecological condition will be maintained. Public lands with unsatisfactory (poor and fair) ecological condition will be managed according to multiple use objectives based on ecological site potential for specific uses **(West HiLine, Standards and Guidelines)**.

  About 40% of the vegetation will continue to be allocated to livestock grazing and about 60% will continue to be allocated to watershed protection and wildlife forage and cover **(JVP)**.

  The quality and quantity of summer wildlife forage will be improved by improving the reproduction and availability of palatable forbs for deer and antelope. Deer and antelope winter range (especially woody species) will be maintained and/or improved. Existing sagebrush stands will be maintained at a canopy cover of 15 to 50% with an effective height over 12 inches **(JVP, Standards and Guidelines)**.

  The quality and quantity of nesting, brood rearing and winter habitat for upland game birds and waterfowl nesting habitat will be improved by providing residual upland grass and forb cover **(JVP, Standards and Guidelines)**.

APPENDIX J
Land Use Plan Guidance

Land will be managed for succulent vegetation production, including a variety of forbs, and big and silver sagebrush will be maintained on sage grouse wintering and nesting areas with a canopy coverage of 15 to 50% and an effective height of 12 inches. Woody vegetation will be maintained or improved for sharp-tailed grouse cover **(JVP, Standards and Guidelines)**.

- **Riparian and Wetland Management:** Riparian-wetland areas will be maintained or improved based on proper functioning condition and desires plant community. Riparian-wetland objectives will be initially accomplished through livestock grazing methods at current stocking levels. If grazing methods are not successful in meeting management objectives, necessary actions will be taken to meet those objectives **(JVP, Standards and Guidelines)**.

  All manageable riparian areas will have management plans implemented to maintain, restore or improve riparian areas to achieve a healthy and productive ecological condition for maximum long-term benefits and values **(West HiLine, Standards and Guidelines)**.

  Livestock grazing in specialized, high use recreation sites along the UMNWSR will be controlled through fencing and/or selective grazing **(West HiLine)**.

  Temporary livestock exclosures, to protect riparian communities, may be necessary when other management actions do not allow seedling establishment of riparian species. Alternate water sources would be provided if primary sources are denied (sic). They would only be in place until riparian species are vigorous enough to withstand proper grazing use as determined by monitoring. Where feasible, riparian pastures will be established to allow rehabilitation of riparian areas while still allowing proper use of AUMs **(West HiLine)**.

  Pastures with riparian areas will not be grazed by livestock during the hot season more than one year out of three in order to maintain or improve riparian communities to a satisfactory condition **(West HiLine)**.

- **Land Treatments:** Land treatments will be used to meet watershed, grazing management and wildlife objectives but will be applied only where grazing management alone will not accomplish the desired result **(JVP, West HiLine)**.

- **Noxious Plants:** Noxious plants will be controlled or eradicated through integrated pest management in order to maintain native rangelands **(JVP, West HiLine, Standards and Guidelines, Interim Monument Guidance)**.

- **Wildlife and Fisheries Management:** Suitable habitat for all wildlife species will be maintained or enhanced. The emphasis for habitat maintenance and development will be on present and potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, crucial wildlife winter ranges, non-game habitat and fisheries **(JVP, Standards and Guidelines)**.

  Habitat for wildlife will be maintained and enhanced. The emphasis for habitat maintenance and development will be placed on present and potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, game birds, fisheries and crucial big-game winter ranges **(West HiLine)**.

APPENDIX J
Land Use Plan Guidance

- **Prairie Dog Management:** Prairie dog towns will be maintained or managed based on the values or problems encountered **(JVP)**. Prairie dog towns smaller than 10 acres will not be actively managed **(West HiLine)**.

- **Elk and Bighorn Sheep Management:** Habitat will be provided for elk in the Missouri Breaks consistent with the MT Dept of FWP Elk Management Plan. Habitat will be provided to maintain and expand (where suitable forage is available) bighorn sheep in the Missouri Breaks **(JVP)**.

- **Recreation:** The recreational quality of public land and resources will be maintained and/or enhanced to ensure enjoyable recreational experiences. Recreation emphasis will be to develop and maintain opportunities for dispersed recreational activities such as hunting, scenic and wildlife viewing and driving for pleasure.

  The UMNWSR and the Missouri River Breaks National Monument will be managed to protect and preserve the remarkable scenic, recreational, geological, fish and wildlife, historic, cultural and other values as directed by Congress in the Wild and Scenic River Act (and amendment for the Upper Missouri) and Interim Management Policy for Newly Created National Monuments **(West HiLine, Interim Monument Guidance)**.

  Recreational opportunities will be provided to the broadest possible cross section of users. Chances for recreational activities will be available to floaters, motorized water users (with seasonal restrictions), hunters, fishermen, sightseers, rock hounds, photographers, hikers, day use picnickers and many others. Visits to the UMNWSR should be a safe, informative experience.

- **Off-Highway Vehicle Use:** BLM will restrict OHV use on BLM land year-long or seasonally to designated roads and trails or close specific areas to protect resource values, i.e., protect vegetation and soils to maintain watersheds and water quality, reduce user conflicts, and reduce harassment of wildlife and improve water quality **(JVP, Interim Monument Guidance)**.

  The Missouri Breaks area will be restricted seasonally to protect fragile soils, reduce user conflicts, and maintain and improve water quality **(JVP)**.

  OHV use would be limited to designated roads and trails in the UMNWSR Corridor **(West HiLine)**.

  Permits may be issued on a case-by-case basis for administrative vehicular use in areas with restrictions **(West HiLine, Interim Monument Guidance)**.

- **Visual Resource Management:** Activities will be managed to comply with VRM policies **(JVP, West HiLine)**.

- **Cultural:** Cultural resources will be properly managed through a systematic program of identification and evaluation. The level of conflict between cultural resources and other land and resource uses will be reduced in compliance with existing laws/regulations **(JVP, West HiLine)**.

Cultural resources will be enhanced and protected and traditional cultural values will be protected **(West HiLine, Interim Monument Management)**.

- **Fire Management:** Fire will managed in the manner most cost effective and responsive to resource management objectives **(JVP, Interim Monument Guidance)**.

  Prescribed fire will be utilized only under specific conditions and may be administered on an individual basis in grassland, sagebrush and/or conifer types to improve wildlife habitat and vegetation production **(JVP, Interim Monument Guidance)**.

  Intensive suppression of wildfire will be applied to areas with high resource values, improvements, recreation sites, administrative sites, sagebrush and juniper, fire sensitive woody riparian species, and/or cultural values and may also be used to prevent fire from spreading to adjoining private property and structures **(JVP, Interim Monument Guidance)**.

  Conditional suppression will be applied to areas with low resource values or to areas not warranting intensive suppression actions and costs. Conditional suppression actions will be used in grass/shrub fuel types, Missouri Breaks fuel types and mountain timber fuel types **(JVP)**.
  All wildfire within the UMNWSR Corridor will receive an initial attack unless a modified suppression plan is in effect **(West HiLine)**.

- **Forest Management:** Minor forest products may be harvested from the Missouri Breaks on a selected sustained yield basis with wildlife habitat objectives in mind **(JVP, Interim Monument Guidance)**.

  Recreational use of forest products within the UMNWSR Corridor will be limited to dead-and-down material **(West HiLine, Interim Monument Guidance)**.

- **Lands:** Resource values will be protected or enhanced when considering applications or requests for Rights of Ways, leases and permits. Acquisitions will be pursued as opportunities arise through exchange or purchase with willing proponents and/or sellers **(Interim Monument Guidance)**.

- **Access to BLM Land:** Access will be pursued to BLM land where no legal public access exists or where additional access to major blocks of BLM land is needed.

- **Signing:** Appropriate signs and posters will be used to promote safety and convenience for visitors and users, define boundaries, identify management practices, provide information about geographic and historic features and protect vulnerable land areas and resources from misuse.

APPENDIX K- Allotment Information

Allotment #	TU	Allotment Name	Permittee	AUMs	Public acres	Live-stock #	Dates of Use	% Public Land
20012	C	79 Coulee	Walling Tom	10	40	1	YR	100
09649	C	ABN Ranch	ABN	66	237	8	4/1-1/1	
09761	C	Arrow Creek Bench	Little, Lawrence	153	2079	13	YR	
09707	A	Arrow Creek West	Derk Bros.	111	575	28	1/1-2/28	100
20040	A	Arrow Creek East	Derks Bros	287	1380	111	11/1-2/28	65
09825	C	B Lazy M	Steven Rae	41	252	3	YR	100
02521	C	Baker Bar	Ebeling, Robert	19	80	2	YR	100
02522	C	Big Sag	Lohse, William	7	40	1	YR	100
09664	C	Big View	Baily Land & Live.	11	124	1	YR	100
09755	C	Bird Coulee	Teton Land Corp.	119	1272	24	5/15-10/15	100
20010	A	Blind Canyon	Bergum B.	287	2300	99	5/1-10/31	48
09657	C	Carter Ferry	Salisbury, Russell WAS CLOUTIER (Renville Lease)	12	120	4	8/1-11/1	100
09816	C	Cherry Ck	Vernon R.	18	94	3	5/1-10/31	100
19807	C	Churchill Butte	Baily Land and Live.	29	269	6	6/1-9/30	100
09683	A	Coffee Creek	Coppedge Ranch Inc	288	2591	24	YR	100
20033	A	Dog Creek (Gibbon Place)	Stulc, Wilson	199	1788	81	5/15-10/15	49
09693	A	Dostal	Bronec, Pat	182	1590	47	YR	33

APPENDIX K- Allotment Information

Allotment #	TU	Allotment Name	Permittee	AUMs	Public acres	Numb	Dates of Use	% PL
09705	C	Engellant	Bronec, Pat	8	40	1	YR	100
09797	A	Evans Bend	Stauner, Mike	99	0	99	5/1-9/30	100
09797	A	Evans Bend	Stauner, Mike	32	1148	3	YR	100
20002	A	Evers Bench	Allen, Warren	12	60	1	YR	100
09864	C	Grace Bench	Ayers, James	31	246	2	YR	100
09763	C	Highwood Ck	Rettig, Herb	7	80	1	YR	100
09703	A	Melton Coulee	Ellis F. Estate	157	1503	13	YR	100
09811	C	Morrow Place	Salisbury, Russell	32	320	3	YR	100
20039	A	Mutton Coulee	Derks Bros.	179	880	85	7/6-10/30	55
10041	C	Reservation Bench	Heggem Ranch	169	2760	24	5/1-11/30	100
09802	C	Ritland	Ritland, Harriet	7	40	1	YR	100
09767	C	Rowe Coulee	MacDonald Farms	108	450	9	YR	100
20079	A	Seventy Nine Coulee	Stulc Anton	180	1113	15	YR	100
09847	A	Slide Coulee (Section 15 Lease)	Walton, Beverly (Vance Todd BP lease)	121	1200	94	5/1-12/31	16
09847	A	Slide Coulee (Judith River)	Walton, Beverly (Vance Todd BP lease)	373	2235	94	5/1-12/31	49
20075	A	Spring Coulee	Knox Terry	358	1639	119	6/10-10/20	69
	A	Stulc AMP	Stulc, Wilson	498	0	120	5/1-11/30	59
20081	A	Stulc AMP	Stulc Wilson	156	4390	13	YR	100
09692	C	The Canyon	Diekhans,B.	36	120	5	YR	100

APPENDIX K- Allotment Information

Allotment #	TU	Allotment Name	Permittee	AUMs	Public acres	Numb	Dates of Use	% PL
02538	C	Vidal	Morris	12	41	1	YR	100
15132	A	Whiskey Ridge	Bergum, David	399	2694	112	5/15-9/15	87
02528	C	Whiskey Ridge 5A Custodial	Bergum, David	8	40	1	YR	100
09841	C	Widow Coulee	Urquhart, Duane	50	360	7	8/1-2/28	100
09866	A	Wilson Coulee	Moline, Chris	155	1207	63	4/1-10/31	35
09866	A	Wilson Coulee (fall)	Moline, Chris	54	0	39	9/1-12/30	35
02517	A	Woodcock Coulee	Bronec, Charles	112	918	86	5/1-10/30	22

* Type use: A = active, C = custodial, N = non-use

Allotments with large parcels of public land are normally classified as active use. Small parcels of public land that are managed within large blocks of private land are classified as custodial use.

Appendix L - Riparian Monitoring Schedule

(Permittees Monitor Yearly)

Allotment Name	Polygon #	Current Health	BLM Monitoring Schedule
ABN	Missouri R. #55	FAR	Biannual
Baker Bar	Shonkin Cr. #1	FAR	Yearly
Big View	Missouri R. #52	FAR	Biannual
Churchill Butte	Missouri R. #53	FAR	Biannual
Coffee Creek	Coffee Cr. #2	PFC	Every five years
Evans Bend	Missouri R. #49	NF	Yearly
Evans Bend	Missouri R. #50	NF	Yearly
Evans Bend	Missouri R. #51	NF	Yearly
Melton Coulee	Unnamed trib to Coffee Creek	FAR	Biannual
Mutton Coulee	Mutton Coulee #1	FAR	Biannual
Rowe Coulee	Missouri R. #54	FAR	Biannual
Slide Coulee	Engallant Coulee #1	FAR	Yearly
Spring Coulee	Spring Coulee #1	PFC	Every five years
Spring Coulee	Slide Coulee	NF	Biannual
Stulc AMP	Dog Cr #1-5	FAR	Biannual
Teton Land Corp	Bird Coulee #1	FAR	Yearly
Teton Land Corp	Unnamed trib to Bird Coulee #1	FAR	Yearly
Whiskey Ridge	Dog Cr #1-4	FAR	Biannual
Whiskey Ridge	Unnamed trib to Dog Creek	NF	None
Whiskey Ridge	Unnamed trib to Missouri River	NF	None

APPENDIX M, SUMMARY OF STANDARDS DETERMINATIONS BY ALLOTMENT

Allotment	Standard 1 (uplands)	Standard 2 (riparian)	Standard 3 (water Quality)	Standard 5 (biodiversity)	Cause
ABN Ranch	Meeting	Meeting	Meeting	Meeting	
Arrow Creek Bench	Meeting	N/A	Meeting	Meeting	
Arrow Creek West	Meeting	Meeting	Meeting	Meeting	
Arrow Creek East	Meeting	Meeting	Meeting	Meeting	
B Lazy M	Meeting	N/A	Meeting	Meeting	
Baker Bar	Meeting	Not Meeting	Not Meeting	Meeting	Livestock - Std 2, 3
Big View	Meeting	N/A	Meeting	Meeting	
Bird Coulee	Meeting	Not Meeting	Not Meeting	Meeting	Livestock – Std 2, 3
Blind Canyon	Meeting	Meeting	Meeting	Meeting	
Carter Ferry	Meeting	N/A	Meeting	Meeting	
Cherry Ck	Meeting	N/A	Meeting	Meeting	
Churchill Butte	Meeting	Meeting	Meeting	Meeting	
Coffee Creek	Meeting	Meeting	Meeting	Meeting	
Dog Creek	Meeting	N/A	Meeting	Meeting	
Dostal	Meeting	N/A	Meeting	Meeting	
Engellant	Meeting	N/A	Meeting	Meeting	
Evans Bend	Not Meeting	Not Meeting	Meeting	Not Meeting	Noxious Weeds – Std 1 & 2

APPENDIX M, SUMMARY OF STANDARDS DETERMINATIONS BY ALLOTMENT

Allotment	Standard 1 (uplands)	Standard 2 (riparian)	Standard 3 (water Quality)	Standard 5 (biodiversity)	Cause
Evers Bench	Meeting	Not Meeting	Meeting	Meeting	Noxious Weeds – Std 2
Grace Bench	Not Meeting	N/A	Not Meeting	Meeting	Livestock – Std 1, 2, 3
Highwood Ck	Meeting	N/A	Meeting	Meeting	
Melton Coulee	Meeting	Meeting	Meeting	Meeting	
Morrow Place	Meeting	N/A	Meeting	Meeting	
Mutton Coulee	Meeting	Meeting	Meeting	Meeting	
Reservation Bench	Not Meeting	N/A	Not Meeting	Meeting	Livestock – Std 1 & 3 Nonnative veg. Std 1
Ritland	Meeting	N/A	Meeting	Meeting	
Rowe Coulee	Meeting	Meeting	Meeting	Meeting	
Seventy Nine Coulee	Meeting	N/A	Meeting	Meeting	
Slide Coulee (Section 15 Lease)	Meeting	Meeting	Meeting	Meeting	
Slide Coulee (Judith River)	Meeting	Meeting	Meeting	Meeting	
Spring Coulee	Meeting	Meeting	Meeting	Meeting	
Stulc	Meeting	Not Meeting	Not Meeting	Meeting	Livestock – Std 2, 3
The Canyon	Meeting	N/A	Meeting	Meeting	
Upper Seventy nine Coulee	Meeting	N/A	Meeting	Meeting	
Vidal	Meeting	N/A	Meeting	Meeting	

APPENDIX M, SUMMARY OF STANDARDS DETERMINATIONS BY ALLOTMENT

Allotment	Standard 1 (uplands)	Standard 2 (riparian)	Standard 3 (water Quality)	Standard 5 (biodiversity)	Cause
Whiskey Ridge	Meeting	Meeting	Meeting	Meeting	
Widow Coulee	Meeting	N/A	Meeting	Meeting	
Wilson Coulee	Meeting	N/A	Meeting	Meeting	
Wilson Coulee (fall)	Meeting	N/A	Meeting	Meeting	
Woodcock Coulee	Meeting	Meeting	Meeting	Meeting	

APPENDIX N
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Appendix Maps

Upper River Land Unit

M 1.1 Landscape Map
M 1.2 Range Allotments/Proposed Improvements

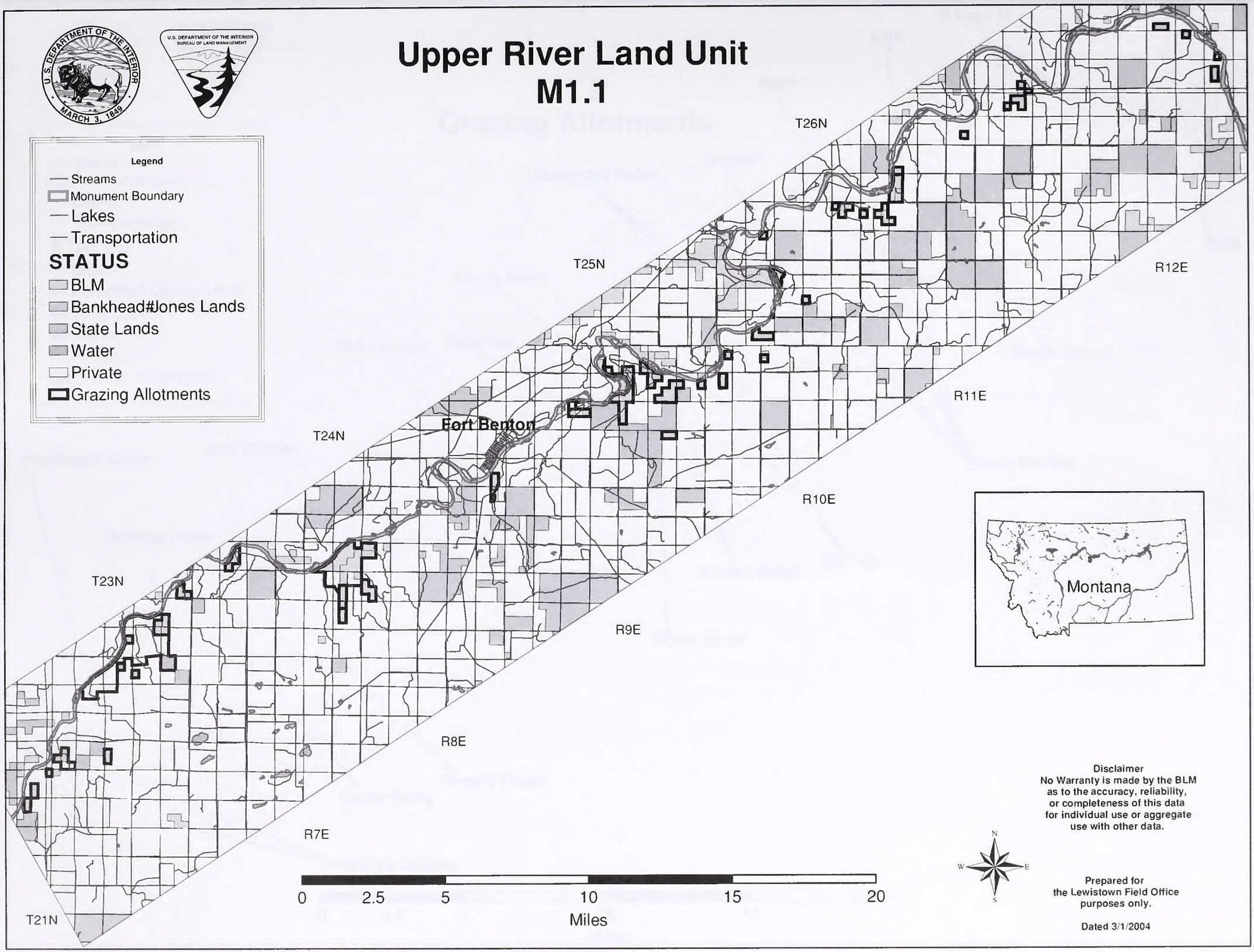
Arrow Creek Land Unit

M 2.1 Landscape Map
M 2.2 Range Allotments/Proposed Improvements
M 2.3 Prairie Dog Towns

Whiskey Ridge Land Unit

M 3.1 Landscape Map
M 3.2 Range Allotments/Proposed Improvements
M 3.3 Bighorn Sheep Distribution
M 3.4 Fire History
M 3.5 Rx Fire projects

Upper River Land Unit
M1.1



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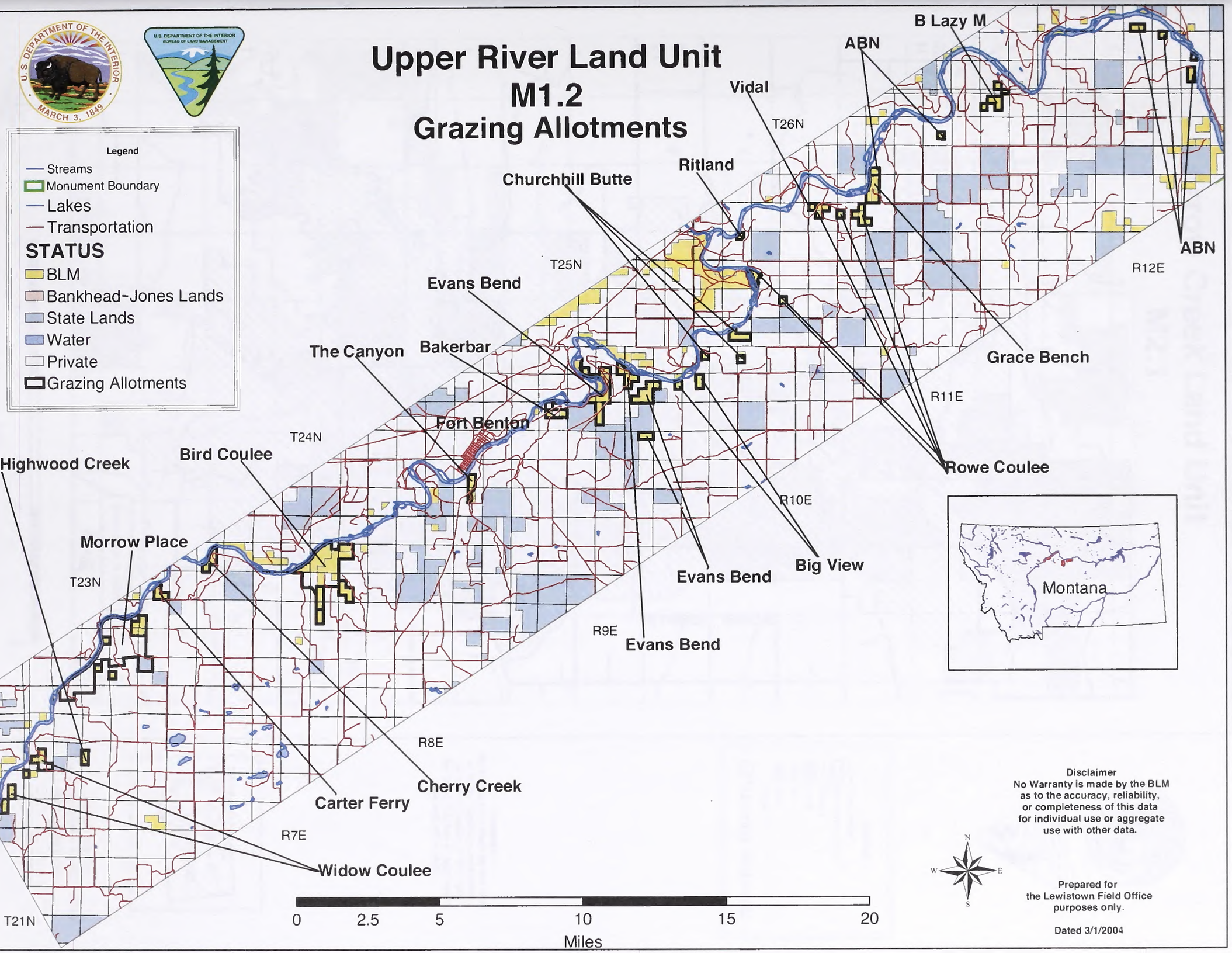
Dated 3/1/2004

Upper River Land Unit
MAP 1

Upper River Land Unit
M1.2
Grazing Allotments



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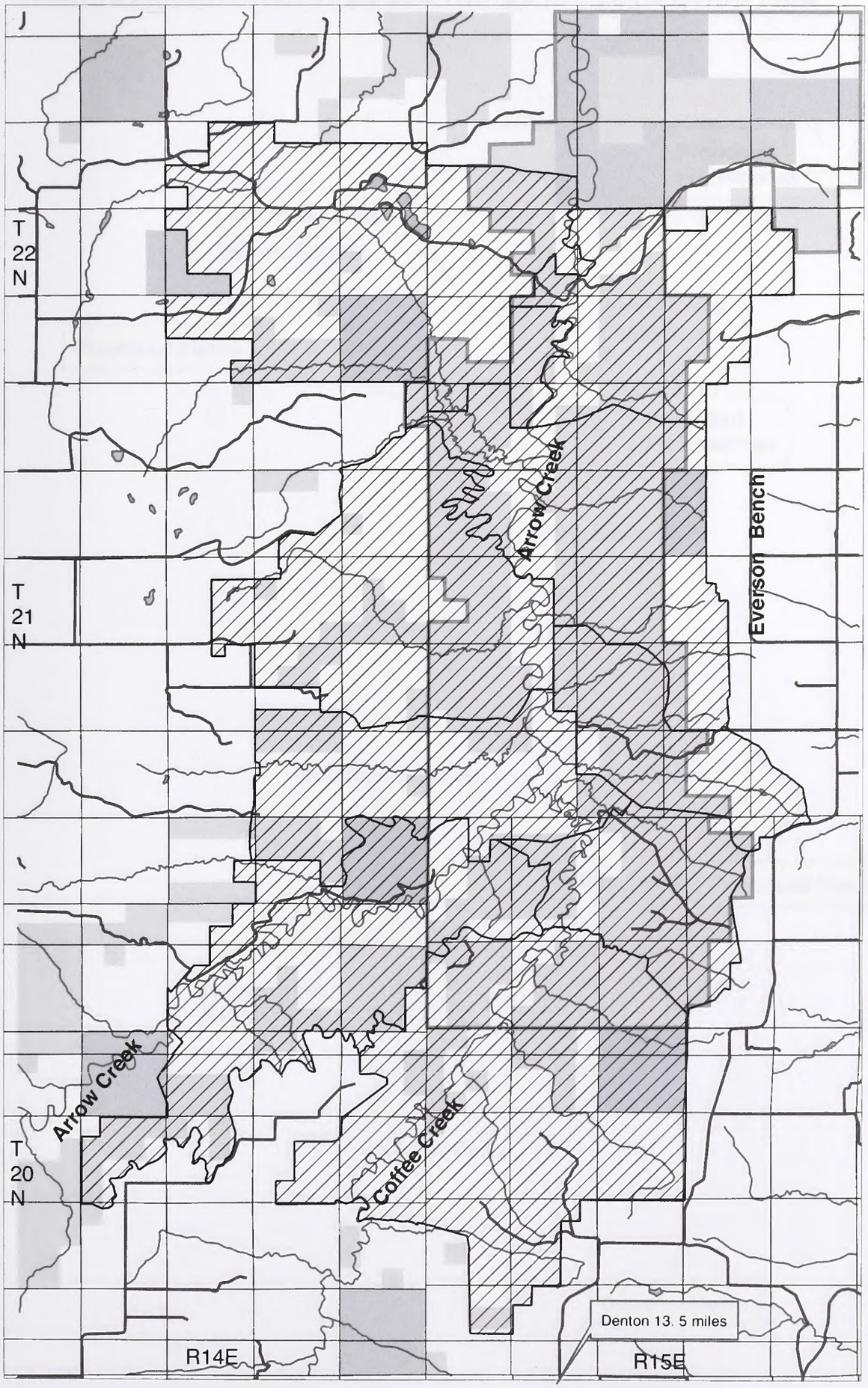
Arrow Creek Land Unit
M2.1



Legend

- Transportation
- Monument Boundary
- Streams
- Lakes
- BLM
- State
- Private
- Grazing Allotments

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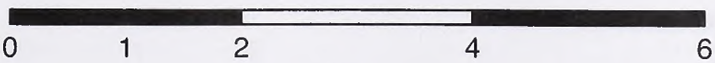
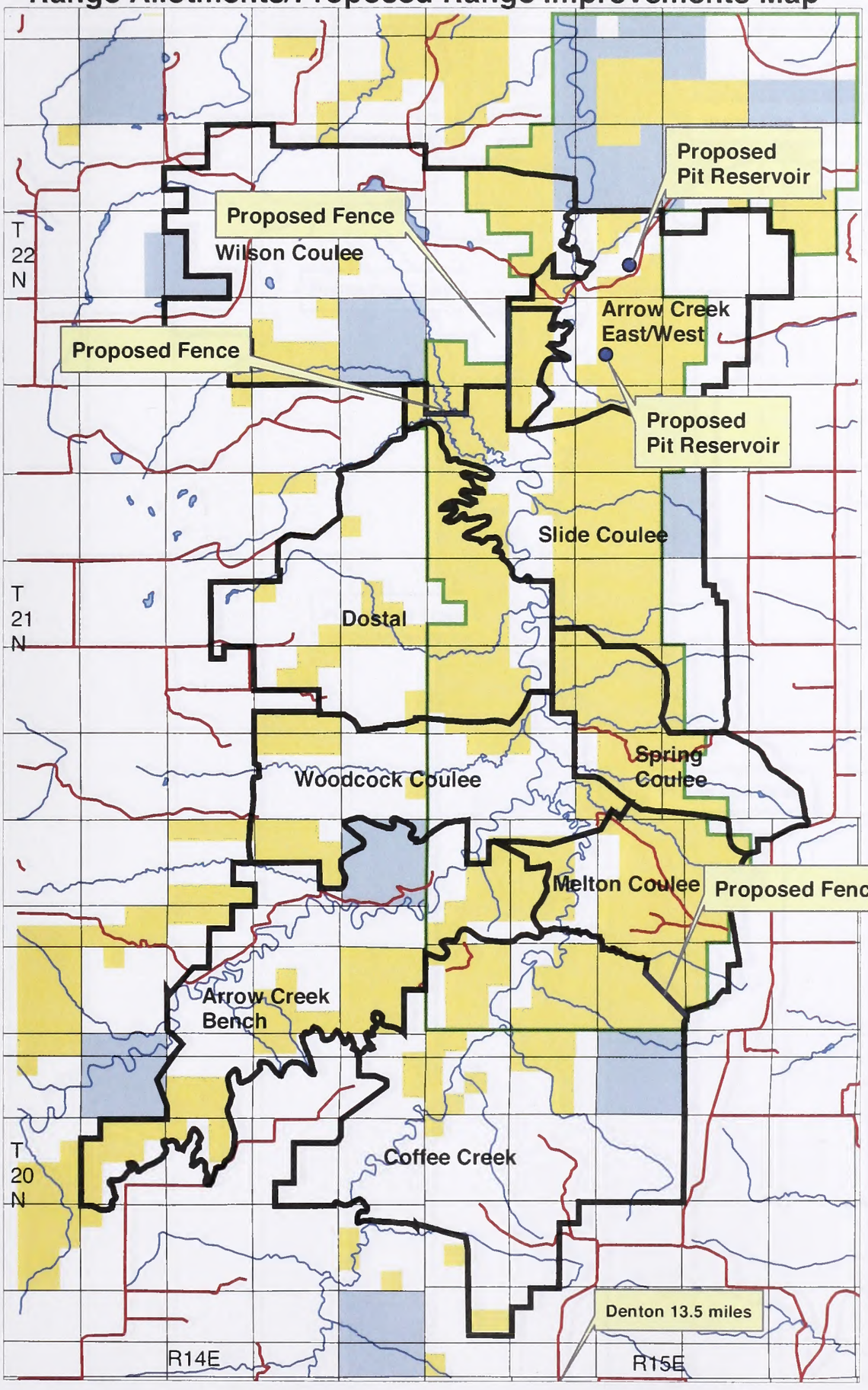


Arrow Creek Land Unit
M2.2
Range Allotments/Proposed Range Improvements Map



Legend
- Transportation
- Monument Boundary
- Streams
- Lakes
- BLM
- State
- Private
- Grazing Allotments

N
W E
S

0 1 2 4 6
Miles

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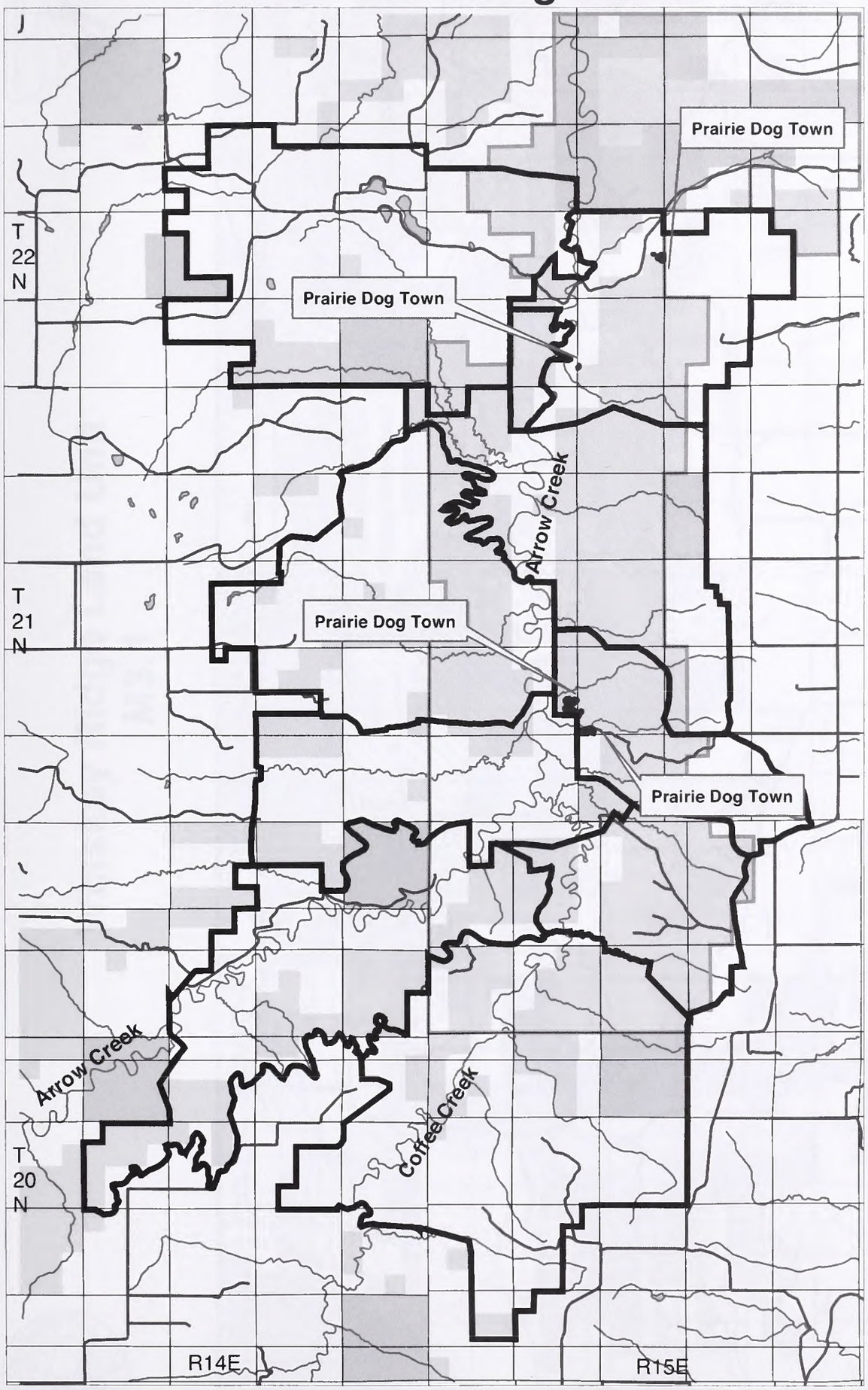
Arrow Creek Land Unit
M2.3 – Prairie Dog Towns



Legend
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- Monument Boundary
- Streams
- Lakes
- BLM
- State
- Private
- Prairie Dog Towns
- Grazing Allotments

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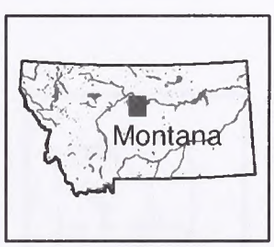
Miles



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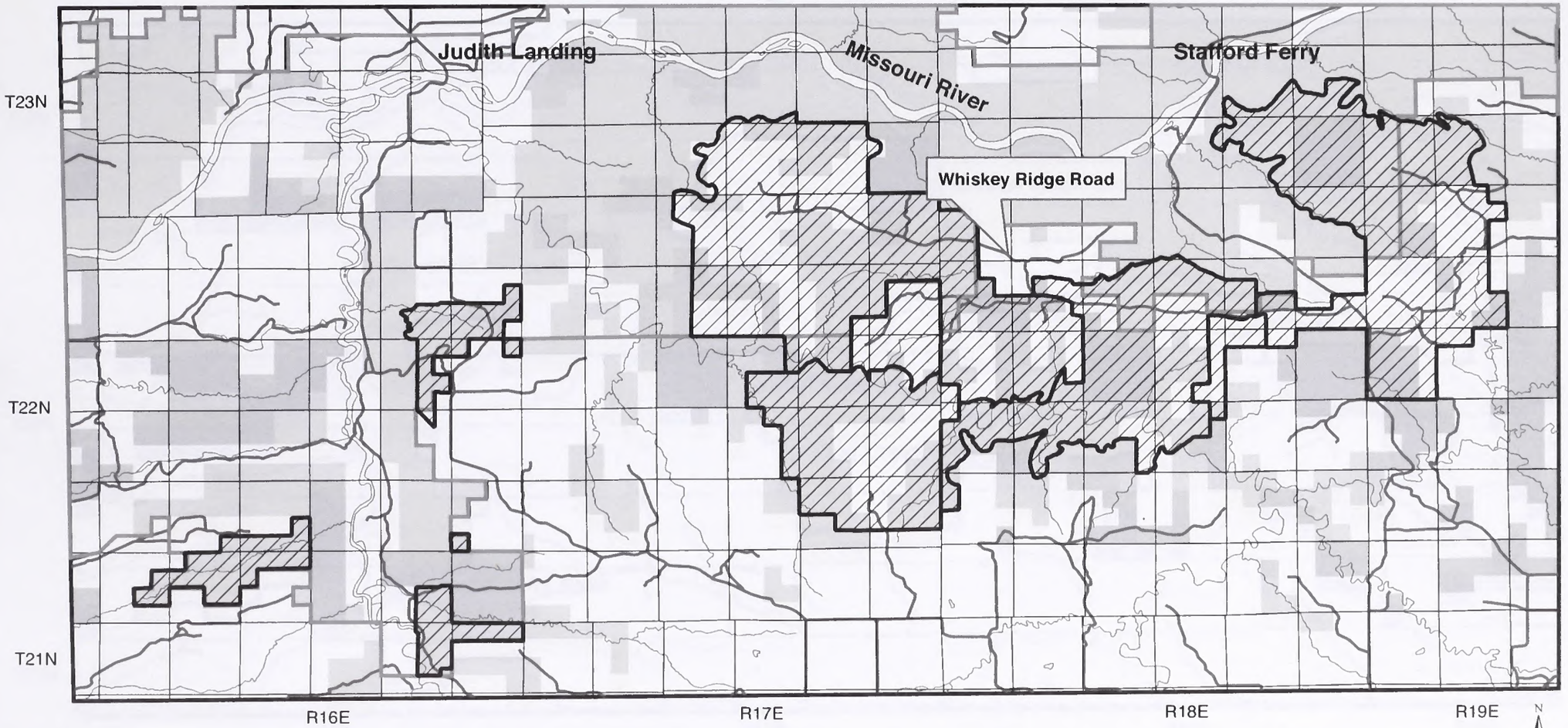
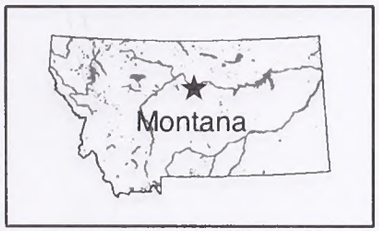
Whiskey Ridge Land Unit
M3.1





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0 0.5 1 2 3 4 5
Miles

Legend

- Bureau of Land Management
- Bankhead-Jones Land Use Lands
- State Lands
- Private Lands
- Transportation
- Grazing Allotments
- Monument Boundary
- Streams
- Lakes

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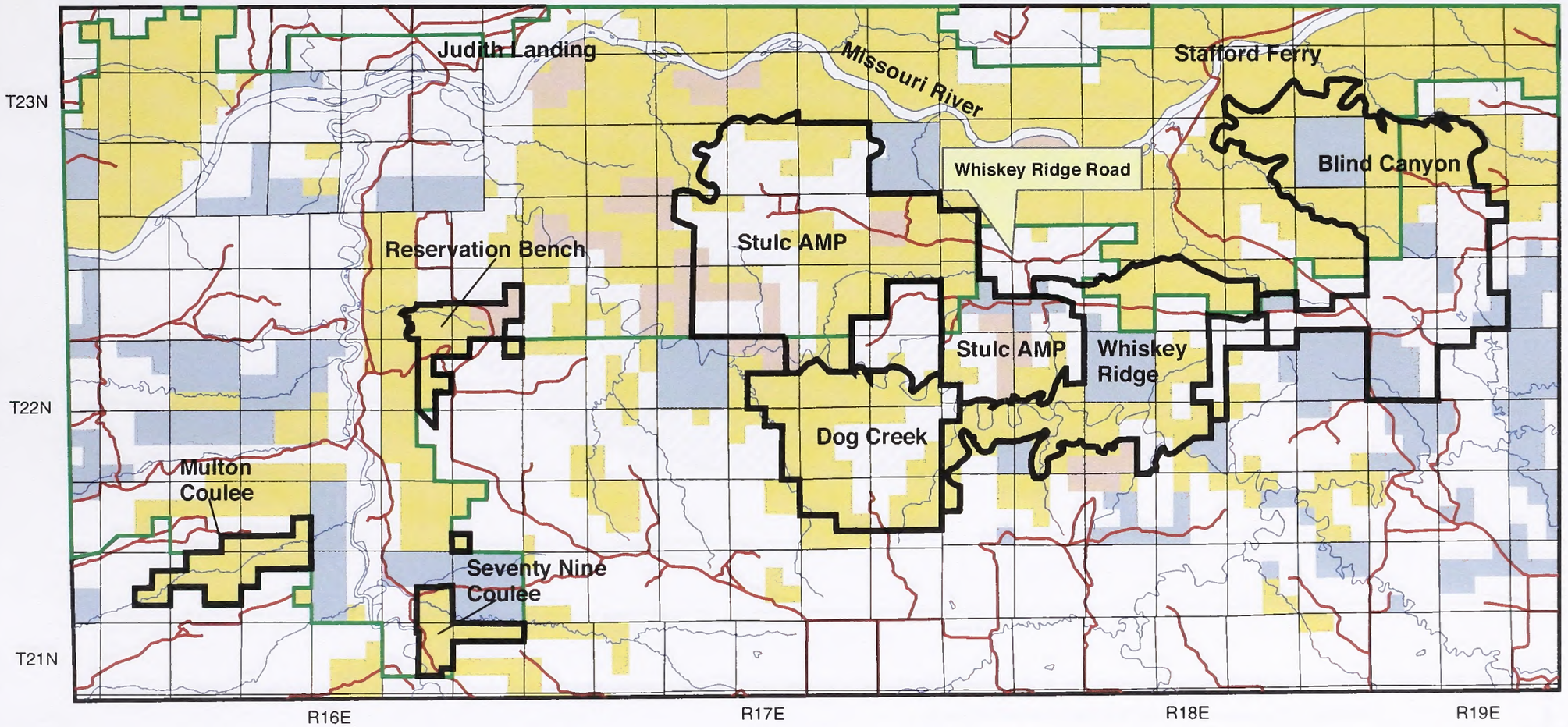
Whiskey Ridge Land Unit
M3.2
Grazing Allotments



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Miles

Legend

- Bureau of Land Management
- Bankhead-Jones Land Use Lands
- State Lands
- Private Lands
- Transportation
- Grazing Allotments
- Monument Boundary
- Streams
- Lakes

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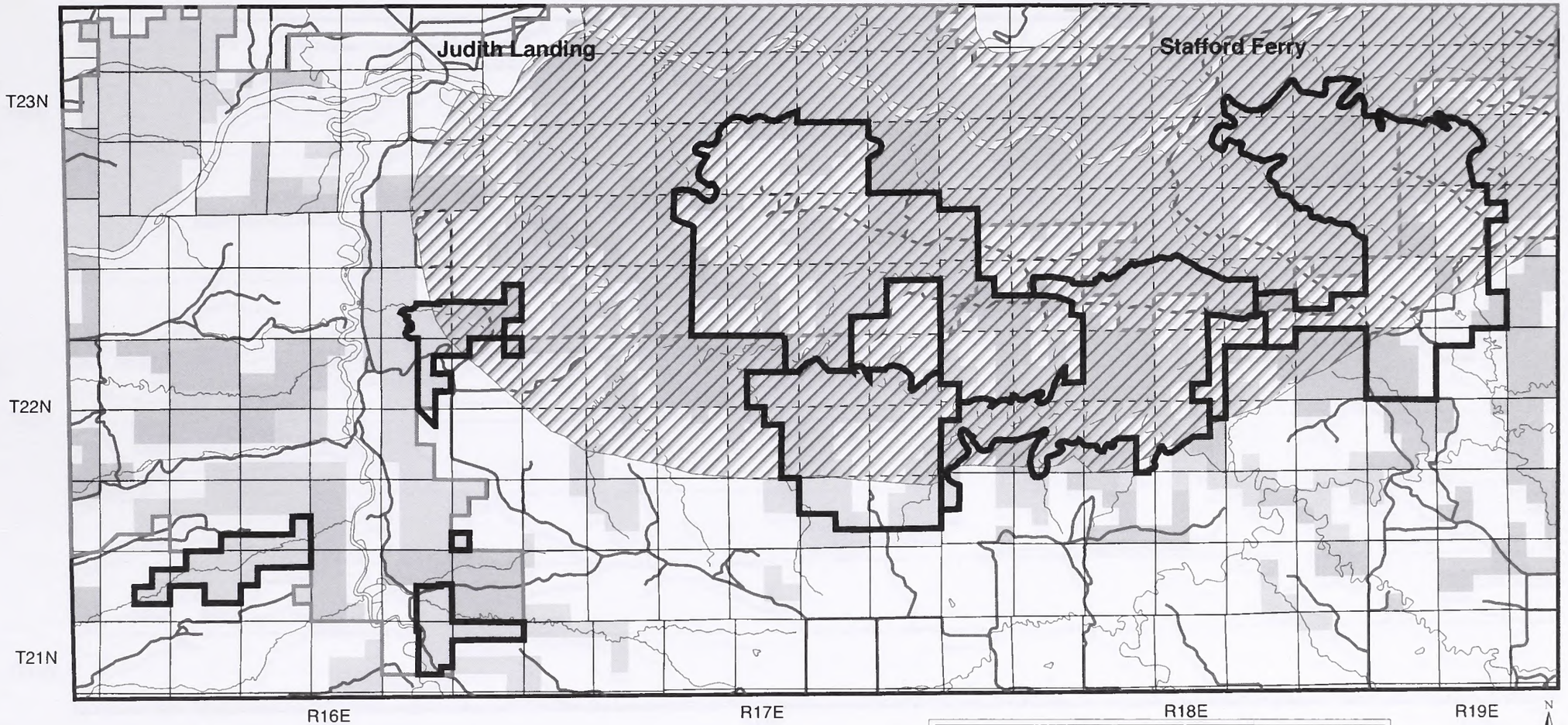
Whiskey Ridge Land Unit
M3.3
Bighorn Sheep Distribution



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0 0.5 1 2 3 4 5
Miles

Legend

- Grazing Allotments
- Big Horn Sheep Distribution
- Monument Boundary
- Bureau of Land Management
- Bankhead- Jones Land Use Lands
- State Lands
- Private Lands
- Transportation

N W E S

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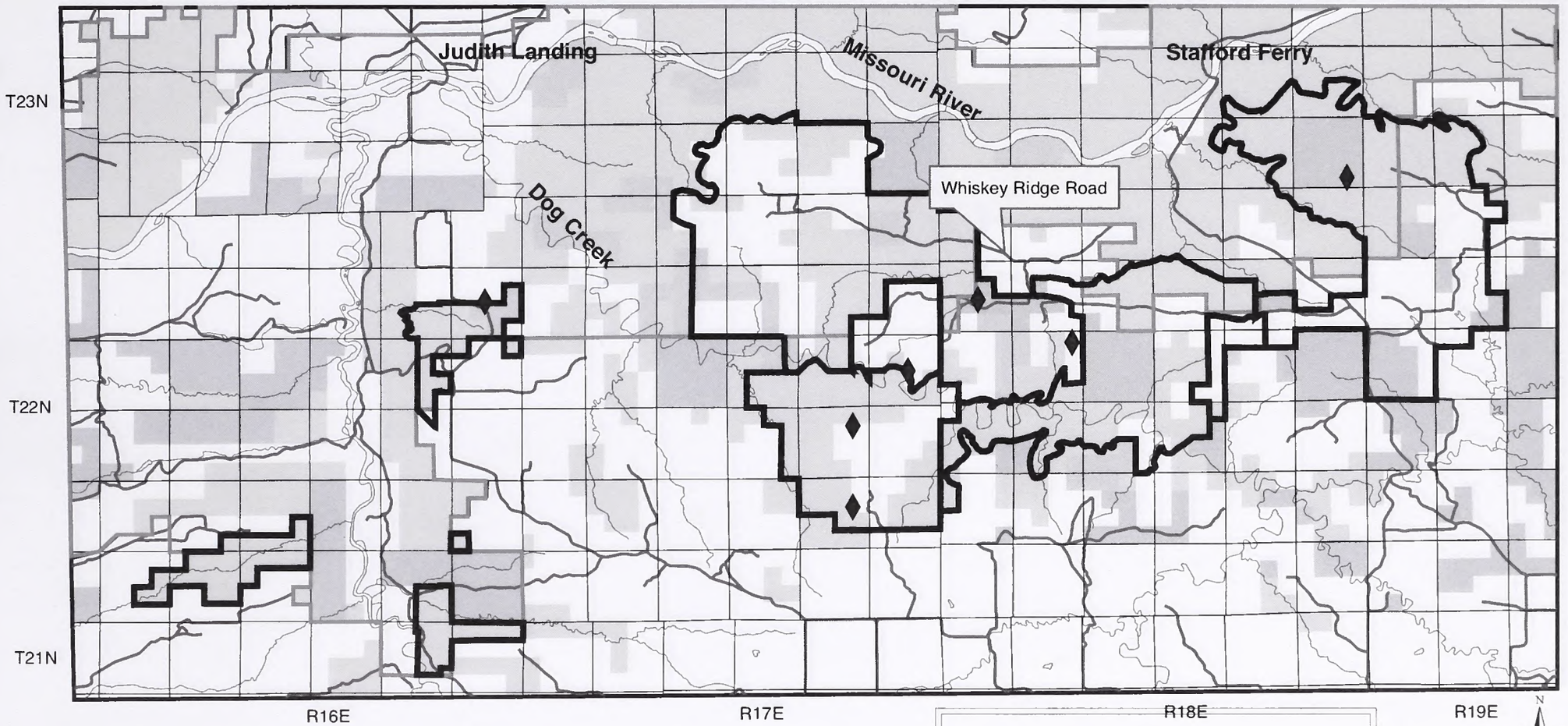
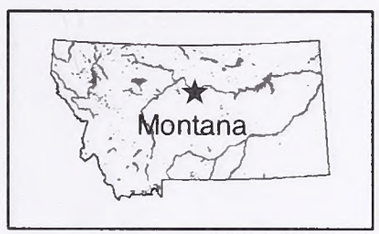
Whiskey Ridge Land Unit
M3.4
Fire History





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0 0.5 1 2 3 4 5
Miles

Legend

- FireHistory
- Grazing Allotments
- Monument Boundary
- Lakes
- Streams
- Transportation
- Bureau of Land Management
- Bankhead- Jones Land Use Lands
- State Lands
- Private Lands

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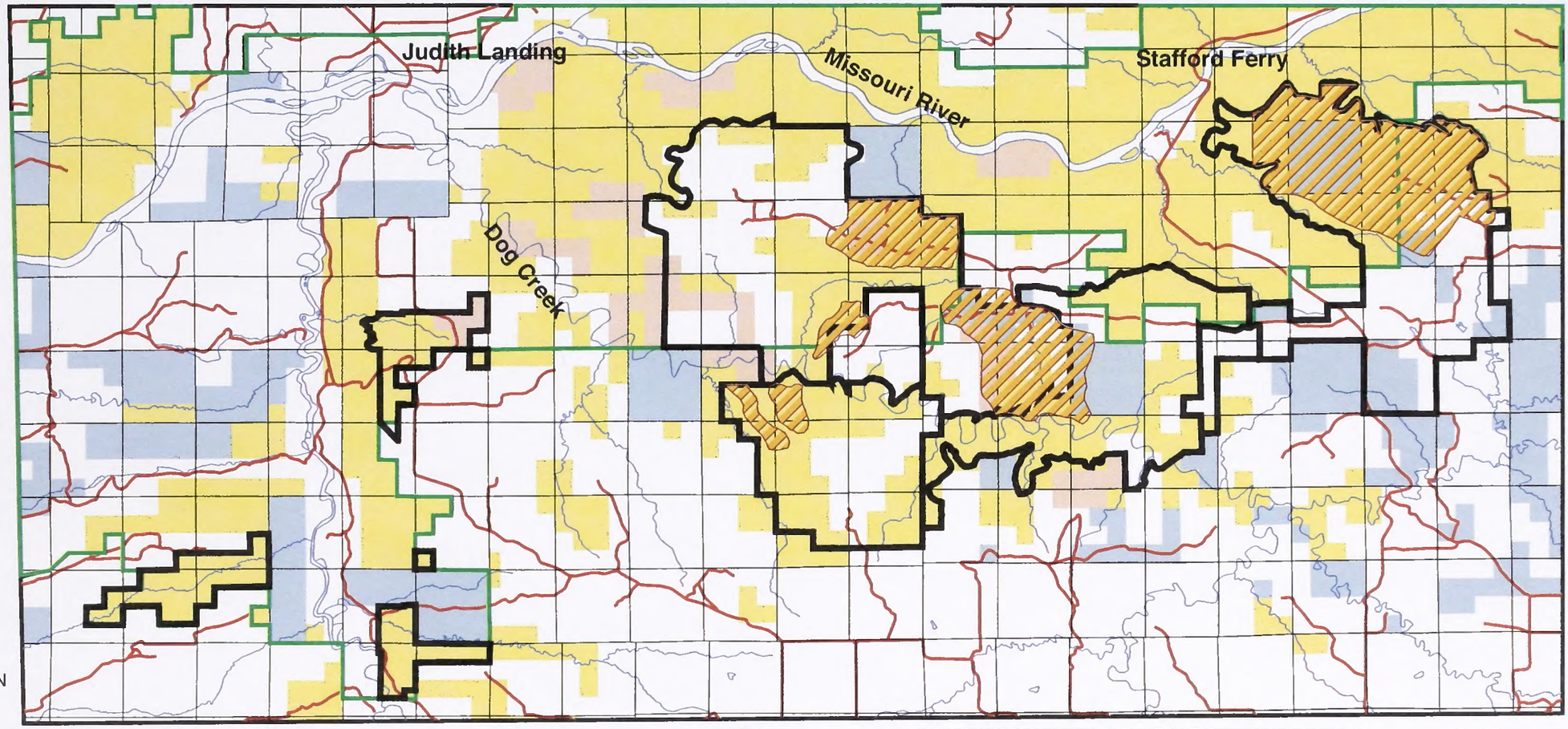
Wrakeley Ridge Land Unit
M3A
Big Horn

Whiskey Ridge Land Unit
M3.5
Prescribed Burn Areas



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Miles

Legend

- Treatment Areas
- Grazing Allotments
- Monument Boundary
- Lakes
- Streams
- Transportation
- Bureau of Land Management
- Bankhead- Jones Land Use Lands
- State Lands
- Private Lands

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Winterview Ridge Land Use
2.6M
Current Land Use